

California State Journal of Medicine.

Published Monthly by the
Medical Society of the State of California

Members of the Society are requested to promptly notify the publication office of change of address, in order that mailing list may be corrected. Secretaries of County Societies are also requested to notify the "Journal" of deaths, removals, etc., and send in names of new members and their postoffice address.

Communications on subjects of interest to the profession are invited. The "Journal" is not responsible for the views advanced by correspondents. Address letters relating to the "Journal" to the publication office, 31 Post Street, San Francisco.

SEPTEMBER, 1903.

EDITORIAL NOTES.

The JOURNAL is under obligations to the *Occidental Medical Times* and begs to acknowledge that fact. It had feared that its little **SCIENTIFIC EDITORIALS.** paragraph about "Scientific Editorials" had been wholly overlooked, and was to be quite forgotten, when the *Times*, in its July number, was good enough to revert to the matter.

Now, the Publication Committee, which has the task of editing the JOURNAL, is made up of men from the ranks of the Society; they have had no special training in medical journalism, and they have read very carefully what the editors of the *Times* have seen fit to say; but they do not quite see just why the *Times* spoke as it did. Why did the *Times* think the JOURNAL was intending to turn to "personal or partisan" matters? Had the JOURNAL said so? Had the JOURNAL done it without saying so? Will the *Times* answer? Will the *Times* continue the really kind office it has begun and tell the JOURNAL exactly how it has erred, or proposed to err in these particular matters? If the JOURNAL has erred, it is ignorant of it; it has no more intention of opening its editorial pages to controversial matters than it has of opening its advertising pages to charlatany. It has a very high idea of its duties to the Society, and it intends to deal "with the present, the living, the actual status of questions that are before us. It is the essence, concentrated and condensed," of all matters that affect the Society, or that portion of the profession outside the Society that the JOURNAL intends to discuss and is discussing. It may sometimes have to refer to men—for the Society is made up of them; it may even refer to them by name, but it never intends to do this as the representative of a party or a faction. "Subjects germane to the government, and improvement of the Society," shall

have full presentation, but always in a way dignified by the absence of controversy—the JOURNAL is above controversy.

Because of this last fact the JOURNAL forgives the *Times* for quoting twice its statement that some work could not be done unless remuneration were offered. The JOURNAL knows that fact, and tells it to the *Times*. Men will work out the scientific problems of subjects in which they are specially interested, but the work is part of their treatment of the whole subject, and the credit is theirs. Men will not do that work in an impersonal manner, as in the editorial pages of a journal. Surely the *Times* knows this. Finally, the JOURNAL begs that the *Times* will continue its kindly and welcome criticism, promising that the Publication Committee will respect the wider experience and riper judgment of its seniors; but the JOURNAL is debarred, by its position, from offering to perform a similar office for the *Times*.

Article VI, Section 3, of the By-Laws of the State Society reads: "The Committee on Publication shall consist of five members. It shall supervise all the publications of this Society, and it shall have full power to determine what papers, or portions of papers, shall appear in the printed transactions (JOURNAL). No paper that has appeared in print, or has been read before any medical association prior to its presentation to this Society, shall be published in the transactions (JOURNAL)." While the letter of the law does not explicitly state that papers read before the State Society at its annual meeting pass out of the control of their authors, the spirit of the law, unquestionably, favors that disposition, giving the Publication Committee the option, and imposing upon it the obligation of selection of such papers as it may choose to print. A number of papers read at Santa Barbara have appeared in other publications without the consent of the Publication Committee, or have been read before county society meetings. This action on the part of authors is, to say the least, scarcely treating the committee with the courtesy it has a right to expect. From the viewpoint of the publisher, additional value is given a first publication, similar to the value given by the lay press to an "exclusive story." Members of the State Society should have enough pride in their own JOURNAL to give it the option on their papers. No magazine or periodical prefers to fill its pages with matter which any considerable number of its readers has seen before; and while it may be entirely proper and commendable to give a carefully prepared treatise as much dissemination as possible, at the same time the start should be made in the "home paper." In case an author wishes to have his article published in a journal

devoted to a particular branch of medical science, or in one having a larger circulation than the STATE JOURNAL, an arrangement may be made by which the article can be published simultaneously in the two periodicals.

Elsewhere in the JOURNAL will be found an account of the recent meeting of the American Pharmaceutical Association. It is well within the truth to say that **RELIEF IN SIGHT.** practically the only questions discussed very generally were the need and desirability of dealing with the evils recognized in lack of uniformity of standard, and too frequent adulteration and impurity of medicines, and how a more friendly feeling between physician and pharmacist might be brought about. In regard to the former topic, it appears that the very moderate resolutions reported by the committee on a proposed National Bureau of Medicines and Foods were accepted and endorsed, practically unanimously. There seems to have been large difference of opinion as to whether the general plan suggested by the committee (published in the July JOURNAL) was the best possible plan. It is but natural that any question of such great importance should be a matter of much discussion, and the more discussion this question receives, the better; for out of much discussion may come some needed relief. That a modification of the plan mentioned, introducing such features as it has been shown are necessary, will be adopted before long, now seems reasonably sure. It seems to be conceded that things are growing worse and that eventually the correction will come in a manner not altogether desirable unless the move toward correction has its inception with those most interested in having it properly done.

When reports such as that presented by Mr. Beringer to the American Pharmaceutical Association, on analysis of phenacetin, are brought to the attention **THE CARELESS PHARMACIST.** of the physician, he certainly can not be blamed for a feeling of distrust. He learns that at least one pharmacist out of 182 was guilty of filling a prescription calling for ten grains of phenacetin with twenty grains of acetanilid. How many others are equally careless and dishonest? We know that there are not many, but we also know there are some. Shall the physician specify some pharmacy where his prescription is to be filled and thus lay himself open to the charge of improperly receiving a commission from the druggist, or shall he do his own dispensing? These questions were brought up not once, but many times, at the meeting of the Pharmaceutical Association, and it was evident that the great mass of pharmacists

desire to see the line drawn between the dishonest and careless, and the honest and careful. When all interested are agreed upon the need for and the desire for some particular undertaking, it would seem scarcely possible to prevent such action. Most pharmacists are neither careless nor dishonest, but the few who are permitted to be so injure the many who are not. It is the many who are straight who will have to combine in the correction of the few who are not and who bring discredit upon all.

An admirable idea seems to have been born into the world by the New Castle County Medical Society of Delaware. It is no less than a plan for presenting things medical to the public in a truly ethical and professional manner. Statements which it may be desired to have placed before the public in the lay press are to be prepared and signed by a "press committee," and thus the personal advertising of the author prevented.

MEDICAL SOCIETIES AND PUBLIC PRESS. It seems to the JOURNAL that such a plan has everything to commend it and little or nothing to be urged against it. To be sure, some one individual will have to do the writing for the proposed committee, but it is highly probable that in most cases the individual will be willing to sink his identity in an impersonal committee, that the result may be to the public good. Without effort one can think of many questions which it is highly desirable that the public should be enlightened upon, yet which a physician of standing would not care to publish over his signature for reasons well recognized. By all means let us have press committees of our medical societies.

There are but few county medical societies in the State unaffiliated with the State Society, and their reason for staying outside **WORK FOR EVERY MEMBER.** is very difficult to understand. No argument is required to prove the advantages of a strong State Society; its power for doing good and its undeniable influence in shaping important measures for the advantage and protection of members of the profession, are self-evident. It must therefore be presumed they are unaffiliated simply through a lack of energy, or, mayhap, a lack of harmony in their ranks; and just here is where members of the State Society may find a field for some desirable missionary work. Besides the unaffiliated county societies there are a few counties entirely unorganized, in some of which this inaction is quite inexcusable. The Board of Trustees has divided the work of infusing some life into these dormant localities, acting as counsellors each trustee having a certain section as-

signed him. The work cut out for the councilors can be done only through the assistance of energetic and willing members of the profession in these localities, who will take the initiative in the matter of organization or affiliation. There is probably not a member of the State Society who is not acquainted with at least one physician in these "outside counties," and by requesting these physicians to interest themselves in bringing the counties into the State Society, great assistance will be rendered the trustees in their work of completing organization of the entire State.

The criticism has been made by a member of the Board of Examiners that while those recently examined showed a satisfactory **IGNORANCE OF MEDICINE.** and even excellent knowledge of surgery, anatomy, etc., they were weak in bacteriology, only a trifle better in pathology, and apallingly bad in medicine. Is this suggestive of general carelessness in the teaching of medicine, or does it indicate a preference on the part of the student for surgery, on which field the limelight plays and where the rewards are, sometimes, quickly won? Whatever the cause, there seems little doubt that the knowledge of practice of medicine possessed by the candidates was astonishingly small.

The JOURNAL desires to be as useful to all who practice medicine on this Coast as it can be made to be. It also desires to help, in every way possible, the practice of **A NEW DEPARTMENT.** medicine, the improvement of medicines, and the upbuilding of the physician's first lieutenant—the pharmacist. To that end the JOURNAL has established a new department, known as the *Materia Medica Department*; for a fuller statement of the work outlined for this feature of the JOURNAL, see page 312.

With many protestations of disgust, but with much evident joy, publications all over the world have been publishing editorials and **FROUDE- CARLYLE.** leaders on the "Froude-Carlyle controversy," as one brilliant editor calls it. As both men are dead and probably resting quietly and peacefully in spite of all this editorial hub-bub, such a caption seems rather startling. About as many arguments of a purely personal and delicate nature have been advanced by the proponents as have been brought forward in rebuttal, and the argument seems to be one in which each editor settles the case for himself. It is unfortunate that so little of the milk of human kindness is to be found in editorial sanctums, and that so few remember, "*De mortuis nil nisi bonum.*"

Another appeal must be made to the secretaries of county societies to send in for publication in the **STATE JOURNAL** abstract reports of the proceedings of their **SECRETARIES SHOULD ASSIST.** meetings, and personal mention of their members. This feature can be made complete only by coöperation of the officers of county societies with the Publication Committee. Largely it must be a labor of love, as is also the work of the committee. The **STATE JOURNAL** is being issued at a considerable expense to the Society, and is not yet in a position to pay for "news." If it were a private enterprise it would be a different proposition, and correspondents would naturally expect to be paid for assisting in its production; but all members of the State Society are joint owners in the **JOURNAL** and all should be willing to assist in making it fulfill its mission and accomplish the purpose of its being. A few moments devoted to the preparation of monthly reports would result in furnishing members all over the State accounts of what their professional brothers are doing in the different sections, and would also be a means of promoting better acquaintance and more cordial relationships.

The manufacturer of pharmaceuticals is a curious genius. He suavely and blandly asks everyone to trust him; yet he has no **THE CURIOUS MANUFACTURER.** trust whatever in his fellow manufacturer. Everything he buys from a brother of the craft who himself makes the same strenuous demand to be trusted, is assayed and frequently sent back. The retort courteous passes—quite *sub rosa*, of course—from manufacturer to manufacturer; but they all join in the chorus and sing together: "We are absolutely honest and you must all trust us." And this while they continue to make and market preparations of jabarandi containing no pilocarpin; strophanthus that is lacking absolutely in strophanthin; iodid of potassium loaded with iodate and adulterated with bromid; and so through the long, sickening list. There is some retributive justice, but not much. It is reported that the child of one manufacturer died under the administration of his own Tr. Strophanthus which he had made from the cheap seeds and which contained not a trace of the alkaloid for which it was given.

Elsewhere in the JOURNAL will be found the resolutions unanimously passed by the Santa Clara County Medical Society at SANTA CLARA its last meeting. The question under RESOLUTIONS. consideration by the committee of this county society is one of the greatest importance to all physicians of the State, and particularly to those who are not located in the larger cities; hence we urge upon every member of the State Society the necessity for a very careful reading of the resolutions passed at San Jose. The Board of Medical Examiners stands between the public and the charlatan, and is the only protection given the public by the State against the unscrupulous greed, fraud and dishonesty of the quack and the "healer." Either an attack upon the Board is justified, or it is not; if the former, then action cannot be taken too quickly; if the latter, then every reputable physician of the State should come to the support of the Board and see to it that the law is carried out. In the larger cities feeling is apt to run high, and personal disputes sometimes lend bias to general questions of polity. Therefore it is the duty of physicians who are uninfluenced by the city surroundings, to take up this matter, consider it most carefully, and act in accordance with their determinations. In this spirit the JOURNAL has called the attention of the physicians of the State to the issue under consideration, and we shall continue to lay all facts and statements presented before the profession of California. We feel it is a duty to see that the matter receives the fullest consideration possible, and the only way this can be done is by publishing all statements germane to the question in the pages of the JOURNAL.

At the last meeting of the Medical Society of the State of California, the following committee was appointed to investigate the TUBERCULOSIS prevalence of tuberculosis in this COMMITTEE. State, and to make recommendations to the Society at its next meeting at Paso Robles.

Dr. F. M. Pottenger, Los Angeles, Chairman; Dr. Geo. L. Cole, Los Angeles; Dr. Jno. C. King, Banning; Dr. Geo. H. Evans, San Francisco; Dr. Edward von Adelung, Oakland, Secretary. This committee started work immediately by directing its secretary to send to all practising physicians in the State, a copy of the following questions:

1. How many cases of consumption (pulmonary or laryngeal tuberculosis) are under your care at the present time?
2. In your opinion, should anything be done to prevent the spread of tuberculosis in California?

These questions were sent out during last May and June, to every available address. It is desired

that those whose names were not on the Secretary's list send their names and addresses and answers to the Secretary, Dr. von Adelung. Over 1200 replies have been received, showing a keen interest in the subject in all parts of the State, and a number of valuable suggestions have been received. It is the purpose of the committee to gather further data respecting the measures adopted in other states, in order to be able to render a comprehensive report at the next meeting of the State Society.

FINAL JUDGES OF SUCCESS.

Who is the final judge of the success or failure of a given surgical procedure?

This question has been suggested by a discussion at a recent meeting of a medical society. In this discussion the physicians spoke on the pathological side of the question. Admitting the improvement of the patient after the operation, they asked if it were due really to the operation that had been done, and if it were due to this, did the success come in accordance with the idea on which the operation was based or because of other conditions not taken count of by this idea? The surgeons claimed that the patient had been in the care of physicians, that they had failed to help him, that the operation was done because of this failure, and that after the operation relief had come. Under these circumstances the surgeons seemed to be quite justified in assuming that the operation had acted in accordance with the theories on which it was based, and that the relief was a logical outcome of the intervention. It is not necessary to refer to the discussion itself any more, but it can be easily seen that the question raised in it was left an open one.

This question is not novel. It comes up in connection with not a few conditions, and these always relate to what are known as the borderland cases; those in which both physician and surgeon has an interest; but in which the division of the interest is not yet well defined. Appendicitis may be taken as an example. It is generally assumed that this is generally a surgeon's case; yet many physicians still treat it medically, and often for slight primary attacks successfully; indeed, the claim that it is a purely surgical condition is negatived by the fact that the surgeons are still complaining that they are called in too late. The gall bladder has not advanced so far as the appendix on its path from medicine to surgery, and the liver lags still farther behind, except for certain well recognized surgical lesions. Kidney surgery is a debatable matter, and it to-day is, perhaps, the most prominent figure on this borderland, since nephroxy has become popular and decapsulation of the kidney has been advised as a remedy for chronic ne-

phritis, a condition that has always been purely a medical lesion. Gynecology offers not a few problems for the physician to fight out with the specialist, and the sacred precincts of the lungs, even, have been invaded; and the emptying of tuberculous abscesses, as well as the amputation of tuberculous apices, have shown that the surgeon is ready to discuss these hitherto purely medical matters with the physician.

These few illustrations are offered, though they may not be necessary; but the question may at once be asked, who is going to decide these matters finally? It will be granted that the patients cannot be judges. It will be granted, also, that surgeons are not going on doing any particular operation from which they do not get the desired therapeutic result. But it is not difficult to imagine cases in which an occasional seeming success may bias the surgeon's ideas, or cases in which a definite but temporary benefit may give the surgeon an optimistic view point which may not be fully warranted by the final results. It is easy, too, to think of the final results not being always known to the surgeon, the patient keeping in touch with the surgeon only so long as his benefit lasted, and turning to others, the physicians, when his relapse came. Of course if a surgeon is keeping special watch of his patients for the purpose of creating personal statistics to check off his work for his own interest, he is wholly outside the category to which reference is made. The number of these men, however, is comparatively small everywhere, and there is a large number who are guided by the most recent announcements in surgical publications, and who base their operations on the dicta of others and lose sight of failures very readily.

What, however, becomes of the patient? It is his inherent impulse to search further for the help that has failed him, and he naturally turns back to the physician. There has been no use of the imagination in these statements. The experience of every surgeon and of every physician has proven the facts again and again, and the physician, under the circumstances, naturally becomes the judge of the surgical procedure.

The question has not, however, only one side. The surgeon is not at all infrequently called to sit in judgment on the work of the physician, and this fact counts all the time for the good of the patient; for two sets of men, looking at one question from two distinct points of view and each considering, from his own point of view, the work of the other, cannot fail to get a better composite idea than could either alone. The laity appreciate this, and often ask that a surgeon or physician be called in consultation; and the medical profession appreciates it, for it is constantly providing meetings of physicians and surgeons where each may

discuss the other's methods. All this is very trite but it leads up to the assertion, which was the idea prompting what has been written, that the final judges of the success of a given surgical procedure may often be the physicians.

THE PUBLICATION COMMITTEE.

All the members of the Publication Committee attended a regularly called meeting of that committee on the evening of August 24th, at the office of the JOURNAL. Many matters of considerable importance were brought up and discussed, and at the close of the meeting the editor was requested to prepare an abstract of the various business transacted, for the editorial columns of the present issue. In addition to a very careful consideration of the cost of publication, etc., the following matters were considered and acted upon:

The request had been presented from several manufacturers and advertisers to publish "reading notices"; on motion it was unanimously decided that no reading notices of any sort should be published in the JOURNAL. The advertising pages are for the use of proper concerns in which to make proper statements; advertising matter in the disguised form of "reading notices" cannot be run in the columns of reading matter.

Certain advertisements that had been sent in with a request for space were considered very carefully, and rejected, as not being such as the JOURNAL could properly recommend.

On motion it was unanimously decided to not publish any papers read at the last meeting of the State Society which had been published in some other periodical prior to their publication in this JOURNAL. It was decided that if authors of papers desired to have them printed elsewhere they should communicate with the JOURNAL, to the end that simultaneous publication in the two periodicals might be arranged for. Several papers were rejected for this reason.

A new department, in which matter relating to both medicine and pharmacy could be published and in which questions of interest to both physician and pharmacist might be considered, was authorized; the department is to be known as the Department of *Materia Medica, Therapeutics and Pharmacy*.

The editorial matter and leading articles for the present number were considered and approved.

It was unanimously agreed that the Publication Committee should meet regularly on the evening of the first Monday of each month, for the purpose of considering the makeup of the next succeeding issue.

The Publication Committee then adjourned to meet at 8:30 p. m., September 7th.

SYMPOSIUM ON TUBERCULOSIS.

THE RATIONAL TREATMENT OF PULMONARY TUBERCULOSIS, WITH REPORT OF CASES.*

By F. M. POTTENGER, Ph. M., M. D., Los Angeles.

Physician in charge of Pottenger Sanatorium for Diseases of Chest and Throat, Monrovia, Cal.

IN DESCRIBING what I would call the rational treatment of pulmonary tuberculosis I have no single remedy or measure that I wish to put forth as a cure for this disease. On the contrary, I believe the rational treatment to be that combination of remedies and measures which best suits each individual case. Although at many times in recent years "cures" have been announced for this disease, as yet the medical profession has little faith in any of them.

Personally I have far more faith in the curability of this disease than is shared by the profession generally. I recognize in many of the remedies and measures which have been brought forth valuable aids which may be turned to the advantage of the tubercular individual; nevertheless, I must admit that, as yet, there has been nothing produced which will cure more than a limited number of the cases in the advanced stages in which we usually find them in general practice.

The basis of treatment, no matter what measures are adopted, must be common sense; yet I believe it is the duty of the man who is treating tuberculosis to hold himself ready and willing to investigate every new treatment and every new remedy which has any rational basis for its existence.

In the treatment of the cases which I report today, it has been my aim to treat the individual as well as the disease. Often I am asked, "What is that remedy that you use in the treatment of tuberculosis?" (referring to the various culture products). To this I always reply that I use everything that I believe will aid in bringing about the recovery of my patient. In dealing with so complex a disease as pulmonary phthisis I believe this attitude to be imperative.

If there is any measure of greater weight than others which the phthisiologist bears to the general profession it is the importance of making an early diagnosis. Tuberculosis can be diagnosed soon after the lung has been invaded, a long time before the advent of bacilli in the sputum; and, fortunately for the afflicted, and to the honor of the medical profession, it is being discovered at this time far more often than formerly. The necessity of this early diagnosis is apparent to

anyone who will take the trouble to examine the records of those who are treating this disease. Whether or not the patient shall live depends very much on whether or not the disease is discovered early. If diphtheria is not discovered until it is too late to successfully use antitoxin; if appendicitis is not diagnosed until it is too late for a successful operation, the physician is blamed for the loss of a life. In tuberculosis the results of a failure to recognize the early symptoms of disease are just as direful to the patient; and, now that the question of early diagnosis has been so carefully worked out, a failure to recognize incipient pulmonary tuberculosis when the patient presents himself for examination will soon be held just as blameworthy as a failure to recognize diphtheria or appendicitis. It should be thoroughly branded on the mind of every practitioner of medicine that tuberculosis is curable, and also that its curability depends on the earliness of treatment. While from 50 to 95 per cent of first-stage cases are being cured, only from 5 to 25 per cent of those far advanced are having their disease arrested.

There are three elements which enter into the treatment of tuberculosis: The disease, the patient and the physician. The stage of the disease we cannot control; its course we may check or modify and, in many instances, we may bring about a cure. To produce this desired result there must be a hearty coöperation on the part of patient and physician. I believe that one of the strongest points in a successful phthisiologist is his power to secure a hearty and intelligent coöperation on the part of his patient.

Other things being equal, the chances of cure in a given case are far greater if the patient is willing and determined to carry out the directions of the physician. I have seen early-stage cases have a hard battle for life simply because they thought it was not necessary to obey all the whims, as they considered them, of the medical attendant. Life is too dear and tuberculosis is too serious a disease to ever be treated in any other way than as a grave malady. A life is always in the balance and both patient and physician must recognize the absolute necessity of uniting their efforts in order to tip the scales on the favorable side.

In most cases I have had the hearty coöperation of my patient. In a few instances, however, I have seen harm done, treatment prolonged and recovery jeopardized by disobedience and indiscretion. Sometimes the tubercular individual, for long periods, is at a point where he is just as apt to get worse as to improve. At such times the greatest care must be observed; an overex-

*Read at the Thirty-third Annual Meeting of the State Society, Santa Barbara, April 21-23, 1903.

eration, an error in dress or a night at the theatre, or at a social gathering, may be sufficient to turn the tide against him. Although my patients have been treated in ordinary office practice without the advantages of a sanatorium, yet I have endeavored to carry out the same measures which have there been found so efficient. In doing this many obstacles have been in the way, and the patients have had the disadvantage, at times, of improperly situated and ill-ventilated rooms; and often have been obliged to subsist on food which was not at all suited to their needs. Nevertheless, in spite of these disadvantages, the results have been very satisfactory.

I now wish to discuss some of the remedies and measures which contributed to the cures and ameliorations in these cases.

CLIMATE.

These patients have been treated in what I believe to be one of the best all-year-round climates in the world. Most of them have been treated at Monrovia, a foothill town at the base of the Sierra Madre mountains, at an elevation of about one thousand feet; the rest in Los Angeles. The special points of advantage in our climate are:

A pure, moderately dry, aseptic air.—These special qualities of the air are shown in the slowness with which animal matter decomposes; dead animals drying up instead of decaying as they do in less favorable climates. This fact is taken advantage of by the natives who are in the habit of hanging their meats up in the open air in order to preserve them. The favorable conditions of the weather make it possible for the tubercular individual to spend his entire time surrounded with this pure, aseptic air.

A maximum of sunshine.—The weather bureau station for Sierra Madre, which is only two miles west of Monrovia and which has practically an identical climate, shows for the year 1901, which was a year of unusual rainfall for this section, 258 clear days, 42 partly cloudy days and 65 cloudy days, 34 of these being rainy. Thus it can be seen that patients can be in the sunshine 300 days in the year; and that they can be in the open air without being disturbed by rains 331 days in the year. The effect of this eternal sunshine, aside from that upon the disease itself, is to keep patients cheerful and happy, driving away blues and homesickness.

Freedom from storms. The foothill region of Southern California is particularly free from storms. There is a constant movement in the air due to the gentle ocean breezes, yet we rarely have a severe windstorm. Sandstorms and fog, which are common in the valley below, are seldom seen here. The rainfall in this region is very light, being usually less than ten inches for the year.

Freedom from sudden changes.—This is very favorable to the patient, while a wide diurnal range produces a tonic effect. The cool nights which accompany it, insure sleep and allow the patient to awaken in the morning rested for the day.

Dry, porous soil. It is well known that drainage plays an important part in the tuberculosis problem and that a dry, porous soil is the best and most favorable for the tubercular individual. The character of the soil here is such that after a heavy rain, in two or three hours the streets are dry and can be traveled on foot or bicycle without inconvenience.

Surely no place can be better suited for the "fresh air" treatment than here. My patients live in the open air all day and sleep in tents or in rooms with open windows at night, thus being constantly bathed in pure, fresh air.

FOOD.

I order for my patients a very liberal diet, the basis of which is meat in the form of rare steaks, roasts, chops (lamb and mutton), beef juice extracted with a meat press, milk, eggs and fats in the form of cream, fresh butter and breakfast bacon; aside from this enough vegetables and cooked fruits are allowed to keep the appetite from tiring. All pastries and articles such as are apt to interfere with digestion are forbidden.

The purpose to be kept in view in prescribing a diet for tubercular individuals is to provide a maximum of nourishment with a minimum expenditure of digestive energy; so, if patients will take from one and one half to two quarts of milk and from four to six ounces of beef juice or half a dozen eggs a day, it matters little whether they eat much solid food or not as far as nutrition is concerned; but the appetite will be better where patients partake liberally of solid food. The tubercular individual who has a poor appetite or a disgust for food can usually digest much more food than he is willing to eat. His digestive power is much better than his appetite indicates, and it is surprising how much food can be taken and digested by one who spends the greater portion of his time in the open air, even though not exercising.

HYDROTHERAPY.

There are a great many hydrotherapeutic measures that can be applied in the treatment of tuberculosis, but one which I have found most useful and one which can be applied almost universally with benefit is the morning cold rub. This consists in the application of cold water to the surface of the body either with the hand, a sponge, or a coarse cloth followed by a vigorous rubbing so that the skin is left in a glow. If the baths are begun with tepid water and gradually reduced in temperature each morning, a week or more pass-

ing before the water is taken at room temperature, the percentage of people who cannot take them with benefit is very small. Their action is to increase the activity of the skin, harden the patient against "catching colds," aid digestion, and serve as a general nervous tonic.

REST AND EXERCISE.

To adjust the proper amount of rest and exercise to the individual is an important question. My plan, in brief, is to forbid exercise if the temperature has a tendency to reach 100° F. in the afternoon, unless it be a short walk in the morning about one hour after breakfast. Patients who have no rise in temperature, if they are in the early stage of the disease, are encouraged to walk enough to harden themselves and yet not enough to tire. Those in the advanced stages, in whom the temperature remains below 100° F., have exercises prescribed according to the lung condition and complications present. Those who are running a temperature are sure to gain faster if they spend much of their time, especially that time when the temperature is up, in the reclining position, preferably in bed. I believe one of the most important pieces of advice that can be given to the tubercular individual is, "never to tire himself."

REGULATION OF THE PATIENT'S LIFE.

Every act of the patient should be under the guidance of the physician. He must understand that he is a sick individual and that he cannot do what well people do. Dissipations of all kinds must be denied the tubercular, and a quiet life followed.

Thus far I have spoken only of measures for the building up of the individual. But this is not all we can do. There are certain remedies that we can use which have a specific action in tuberculosis; and besides, there are many remedies and measures which can be advantageously directed against certain conditions and complications. There has been too much of a tendency in the treatment of tuberculosis for men to become known as the followers or representatives of some special remedy or measure. One is known as an exponent of the fresh air cure, another the creosote treatment, another the tuberculin treatment, another places his faith in inhalations, while another cures his cases by electricity. How much better it would be if all could be known simply as phthisiotherapists, as men who are devoting their energies to the cure of tuberculosis and not to the advancement of any particular measure. To cure pulmonary tuberculosis, especially in the advanced stages, requires all the help that we can get, and he will be the most successful who will sacrifice pet measures to the cure of the disease.

He who sees nothing more in the cure of phthisis than the employment of fresh air is little, if any, better than he who sees nothing in the treatment of disease other than the administration of drugs. I now wish to mention several measures which have greatly aided me in the treatment of this disease.

CULTURE PRODUCTS.

My experience with culture products in the treatment of tuberculosis began seven years ago. Since then I have been using them and studying their action. I have become firmly convinced that in them we have a very valuable aid in the treatment of this disease. I have given in all perhaps seven thousand injections, and have never seen harm done, nor have I seen an abscess at the point of injection. My experience tells me that they will do in practice what should be expected from theory and animal experiment, namely, afford an immunity to the healthy tissue against the extension of the disease, render those treated less liable to a relapse when an apparent cure has been attained and stimulate the tubular tissue to repair. (1), (2), (3).

Koch, Spengler, von Ruck, De Schweinitz and others have shown that the guinea pig can be immunized against infection by the use of tuberculin. Recently this same immunizing property has been proven by Behring (4) and Pearson and Gilliland (5) in the case of cattle. Regarding the effect of tuberculin, Aschoff (6) says that it does not act as an antitoxin in the diseased areas, but in the healthy tissues, producing an immunizing effect which protects the well tissues from invasion. There is also a stimulation of the diseased tissue which aids in repair. This I have repeatedly observed in the treatment of lesions in the larynx.

From statistics gathered, as well as from practical experience, I believe that these remedies will increase the patient's chances of cure by at least 20 per cent. Their use requires care and skill, but no more skill than any intelligent practitioner can acquire by patient study and practice.

DIRECT MEDICATION TO THE AIR PASSAGES.

I do not believe that anyone who understands the pathology of pulmonary tuberculosis believes that it is possible to cure the disease by the application of remedies directly to the air passages; nevertheless, there are certain symptoms that can be greatly alleviated by this form of medication.

I make it a routine matter to look after the upper air passages and see that respiration is as free as possible; however, I do not think it wise to operate or make an open wound in the upper respiratory tract while the sputum contains bacilli. Until they have disappeared palliative measures are best. Many a cough can be alleviated and

controlled by attention to the pharynx and larynx. This routine work also makes it possible to discover disease in the larynx before destructive changes have taken place.

Daily inhalations make the expectoration easier, lessen the cough and have some power in disinfecting the larger air spaces. The importance of this line of treatment is overestimated by the layman, for it appeals to him as going directly to the seat of the trouble.

A measure which I deem of great benefit in certain cases is the intratracheal injection of remedies. During the past year I have been treating two cases with large cavities in the upper lobes by this method. I have the patient sit inclined to the side on which the cavity is found, holding his head erect. Then, with a good light and under the guidance of the laryngeal mirror I quickly inject the remedy while the patient slowly inspires. The patient is then put upon a couch with his hips elevated and shoulders low, so that the remedy finds its way by the aid of gravity, into the cavity. If the attempt has been successful the fluid can easily be detected in the cavity. I have been using for this purpose sterilized olive oil containing 4% menthol, 4% camphor and 4% iodoform. Recently I have substituted for this izal from 1% to 10% in Price's redistilled glycerin. The glycerin has the advantage over the oil in that it mixes readily with the sputum and also in that it will diffuse itself further into the finer bronchi by means of capillary attraction. It has been shown by Prof. Delepine that a cubic centimeter of an izal glycerin mixture containing 1-125 cc. of the remedy will, when mixed with an equal quantity of sputum, kill the bacilli in one hour (7). By the aid of these injections I have been able to help convert one secreting cavity into a dry one and in the other case see the secretion markedly decrease. The largest quantity that I have used at any one time is five drams, although the patients can tolerate much larger quantities.

PNEUMATIC CABINET.

I have used this apparatus with great benefit after activity has ceased and the moisture has

largely or entirely disappeared. I have never been able to bring myself to the point of thinking it best to use it in cases with much moisture in the chest. By its use collapsed air cells can be opened, the capacity of the chest increased and absorption hastened, thus relieving the embarrassment to the circulation and hastening the flow of blood in the part. Another place where the cabinet can be used to advantage is in developing the chests of those who seem to be especially predisposed to tuberculosis.

DRUGS.

In my practice drugs play a secondary part to the measures which I have already mentioned. I only use them as adjuvants to general measures and for the correction of certain symptoms. Cinnamic acid I have used in a few cases and believe it to be of some value, although my experience is too limited to use as a basis for judgment. Ichthyol seems to facilitate expectoration and aid digestion in certain cases. Creosote and creosotal I never use for any specific action; however I do use them in intestinal putrefaction, in cases of severe cold where the inflammation has extended below the larynx, and the latter I always employ in case of pneumonia. Aside from this, my use of drugs consists for the most part in the employment of a few stomachics, intestinal antiseptics and general tonics in cases where they seem to be especially indicated.

The symptoms of cough, night sweats and hemorrhage I am rarely called upon to treat among my patients. The careful regulation of their lives makes these symptoms very rare. Although 34.6 per cent of my patients gave histories of one or more hemorrhages before treatment, not one had one after treatment began. Cough is so well controlled by the care of the upper air passages, inhalations and regulation of the patient's life that I have almost discarded cough mixtures. Night sweats rarely call for measures other than a cool sponge with vinegar and water, or formalin and water on retiring.

In my classification I have followed closely that of Turban, which is as follows:

| | PATHOLOGICAL. | PERCUSSION. | AUSCULTATION. | |
|------------|---|--|--|--|
| | | BREATH SOUNDS. | RALES. | |
| Stage I. | Bronchitis, peribronchitis. Scattered foci in one apex. No or little expectoration. Generally no tubercle bacilli in sputum. | Normal to slight want of resonance over area of one lobe or over half of both lobes at most. | Over one or both apices harsh or weak vesiculo-bronchial to broncho-vesicular. | None or crackling fine or medium over area of altered resonance. |
| Stage II. | Bronchitis, peribronchitis, infiltration of slight degree over both supraclavicular and suprasternal fossae or infiltration of one lobe without other foci. | Decided localized dullness over one lobe, or medium dullness over half of two lobes. | Harsh to broncho-vesicular breathing over the dull areas. | Rales of medium quality. |
| Stage III. | All cases more advanced than stage II. | Pronounced dullness. Tympanic note and variations of pitch. Cracked pot sound. | Bronchial or amphoric. | Coarse metallic rales. |

In recording results I have designated those cases as apparently cured which at the time of discharge show no clinical symptoms; whose expectoration has disappeared, or if present, contains no bacilli, and whose lungs are either normal upon examination or, if the changes are too far advanced for this to be, at least show no signs of activity. If, after one year, physical and clinical examination and the tuberculin test reveal no signs of disease, I believe that we are justified in calling the case cured. Those cases are spoken of as arrested where the clinical symptoms have disappeared, bacilli are absent, and physical examination reveals no activity; yet the case has advanced too far to speak of a cure until the lapse of time. Those are spoken of as improved who have made gains in general condition, clinical symptoms and physical signs.

With this as the basis of classification there have been treated* 12 cases in stage I, of which number all were apparently cured. So far there has not been a single relapse, although 1 has been dismissed four years; 1, three years; 3, two years; 2, one and a half years, and 5 less than a year. In the stage II there were treated 8, of whom 6 were apparently cured and remain well to-day, and 2 grew worse; 2 have been dismissed one and a half years; 1, one year, and 5 less than a year. There were 7 in stage III, in two of whom the disease was arrested and the rest improved. As yet not one case reported here has died; and even those who are designated as improved are, and have been since dismissal, doing a moderate amount of work with little inconvenience.

This report includes all the patients except those now under treatment, whom I have treated for a period of two consecutive months in the time covered. Of course, if those stage III cases which are reported as improved had remained under treatment longer there is no doubt that one or two more would have been apparently cured, but I report them as they are.

I do not believe that such results as these can be produced by any single line of treatment, but only by a combination of the various remedies and agencies which we have at our command, such as I choose to designate the rational treatment of pulmonary tuberculosis. And then the same interest on the part of the physician must be maintained and the same obedience and cooperation on the part of the patient and his attendants must be had as though the case were one of pneumonia or typhoid fever; but, surely the end attained is worth the struggle.

*All cases with the exception of No. I were treated with culture products in addition to other measures.

Case Histories.

STAGE I.

No. 1—Age, 26; history, negative; ill, 3 months; temperature, 99.6°; pulse, 90; cough, slight; expectoration, scanty; lungs, deposit in upper right lobe; weight, 155. Condition on discharge: Treatment, 3½ months; temperature, 98.4°; pulse, 72; no cough or expectoration; weight, 145. Result: Apparently cured. Has been discharged four years and is still well, so we call case cured.

No. 2—Age, 10; tubercular history, positive; ill, 1 month; temperature, 99.6°; pulse, 100; slight hack; tuberculin test, positive; slight deposit at right apex; weight, 71. Condition on discharge: Treated 2½ months; temperature, 98.4°; pulse, 90; no cough; chest clear; weight, 80. Result: Apparently cured. Discharged three years, still well, cured.

No. 3—Age, 34; history, negative; ill, 6 weeks; temperature, 99.4°; pulse, 84; slight hacking cough; no expectoration; tuberculin test, positive; lungs, slight deposit in both apices; weight, 112. On discharge: Treated, 3½ months; temperature, 98.4°; pulse, 79; no cough; lungs, clear; weight, 115. Result: Apparently cured. Discharged two years, still well, so cured.

No. 6—Age, 28; history, positive; ill, 1 month; temperature, 99°; pulse, 80; slight hack; no expectoration; tuberculin test, positive; lungs, tubercular deposit in both apices; weight, 131. On discharge: Treated 3½ months; temperature, 98.4°; pulse, 74; no cough; lungs, clear; weight, 132. Result: Apparently cured. Discharged two years, still well, so cured.

No. 14—Age, 25; history, positive; ill, 9 months; temperature, 99.2°; pulse, 90; hacking cough; tuberculin test, positive; no expectoration; right upper lobe infiltrated with rales; weight, 121. On discharge: Treated 2 months; temperature, 98.4°; pulse, 80; percussion and auscultation nearly normal; weight, 123. Result: Disease arrested. Discharged two years, married, lived in Indiana climate, still well and strong; so apparently cured.

No. 21—Age, 32; history, negative; ill, 7 years; climatic arrestment with new outbreak; temperature, 99.6°; pulse, 100; slight hacking cough; expectoration scant, following three small hemorrhages; bacilli absent; tuberculin test, positive; slight tubercular deposit with rales at both apices; weight, 110. On discharge: Compelled to stop treatment at end of two months; temperature, 98.8°; pulse, 90; cough, none; expectoration, none; lungs nearly clear; weight, 117; re-examined 18 months later; lungs clear. Result: Cured. Present weight, 125.

No. 23—Age, 29; history, positive; ill, 6 months; temperature, 100°; pulse, 90; bacilli, positive; cough, mornings; expectoration, ½ ounce; deposit in right upper lobe; weight, 191. On discharge: Treated 3 months; temperature, 98.5°; pulse, 80; cough, none; expectoration, none; lungs clear; weight, 199. Result: Apparent recovery. Discharged 1½ years, still well, so cured.

No. 45—Age, 17; history, positive; ill, 2 months; temperature, 99.8°; pulse, 100; bacilli, negative; tuberculin test, positive; cough, occasional dry hack; no expectoration; deposit in right apex; weight, 120. On discharge: Treated 3½ months; temperature, 98.4°; pulse, 68; lung clear; no cough; no expectoration; weight, 132. Result: Apparent recovery. Discharged 9 months, still well.

No. 47—Age, 29; history, positive; ankylosis of knee of tubercular origin for 20 years; temperature, 99.4°; pulse, 88; troublesome hacking cough; hemorrhages two months before, followed by bloody expectoration; bacilli, negative; tuberculin test, positive; slight infiltration of left upper lobe with moist rales; weight, 112. On discharge: Treated 6 months; temperature normal; pulse, 78; no cough; no expectoration; lungs clear; weight, 117. Result: Apparently recovered. Discharged three months.

No. 48—Age, 51; ill, 5 months; temperature, 99°; pulse, 88; troublesome hacking cough; hemorrhages two months before, followed by bloody expectoration; bacilli, negative; tuberculin test, positive; slight infiltration of left upper lobe with moist rales; weight, 124. On discharge: Treated 6 months; temperature normal; pulse, 78; no cough; no expectoration; lungs clear; weight, 117. Result: Apparently cured. Discharged three months.

No. 63—Age, 22; history, positive; ill, 3 months; temperature, 99.4°; pulse, 85; cough occasionally; expectoration scant; no bacilli; tuberculin test, positive; slight tubercular infiltration in left apex with weakened and slightly roughened respiratory note; weight, 124. On discharge: Treated 6 months; temperature, 98.4°; pulse, 75; no cough; no expectoration; lung normal; weight, 128. Result: Apparent recovery.

No. 67—Age, 23; history, positive; ill, 4 months; temperature, 99°; pulse, 98; cough, slight; expectoration, none; tuberculin test, positive; invasion of right apex with weakened, slightly roughened respiratory note and few rales; weight, 100. On discharge: Treated 4½ months; temperature, 98.4°; pulse, 80; no cough; no expectoration; lungs clear; weight, 115. Result: Apparent cure.

STAGE II.

No. 12—Age, 22; history, positive; ill, 18 months; temperature, 100°; pulse, 95; bacilli, negative; tuberculin test, positive; hacking cough; expectoration scanty, often bloody; right upper lobe infiltrated with recent extension to fifth rib posteriorly and also recent extension to left apex; fine crepitant rales over right upper lobe anteriorly; weight, 151. On discharge: Treated 5½ months; temperature, 98.4°; pulse, 80; bacilli, negative; no cough; no expectoration; lung normal, except slight elevation of percussion note and slightly prolonged expiration over right apex; weight, 160. Result: Apparent recovery. Discharged nineteen months, still well, so cured.

No. 8—Age, 34; tubercular history; ill, 3 months; pleurisy and pneumonia 1 month; temperature, 99.5°; pulse, 95; bacilli, negative; tuberculin test, positive; slight hacking cough; no expectoration; lower lobe of right lung showed delayed resolution and upper and middle lobes showed tubercular deposits; weight, 108. On discharge: Treated 6 months; temperature, 98.4°; pulse, 74; cough, none; lungs clear; weight, 115. Result: Apparent recovery. Discharged eighteen months, still well, recovered.

No. 25—Age, 19; history, positive; ill, 6 months; temperature, 99.4°; pulse, 96; slight hacking; scant expectoration; tuberculin test, positive; right upper lobe infiltrated with recent extension to middle and lower lobe; weight, 130. On discharge: Treated 4½ months; temperature, 98.4°; pulse, 80; no cough; no expectoration; lungs clear; weight, 142. Result: Apparent cure. Discharged one year, still well, so cured.

No. 28—Age, 43; history, positive; ill, 6 months; temperature, 99°; pulse, 90; bacilli present; cough, mornings, occasionally during the day; expectoration, 2 ounces muco-purulent; infiltration of right upper lobe with extension to middle, and symptoms of softening at level of first interspace; weight, 104. On discharge: Treated 7 months; temperature, 98.4°; pulse, 78; no cough; no expectoration; lung clear; weight, 106½. Result: Apparent cure. Discharged seven months, still well; weight, 112½.

No. 34—Age, 28; history, positive; ill, 2 years; temperature, 99.5°; pulse, 80; cough, persistent; expectoration, 3 ounces mucous and muco-purulent; bacilli, present, also found two years previously; infiltration of both upper lobes with recent extension to left lower; mucous rales over both upper lobes; weight, 99. On discharge: Treated ten months; temperature, 98.4°; pulse, 78; bacilli, absent; no cough; lungs clear; weight, 110. Result: Apparent recovery. Discharged as unimproved.

No. 53—Age, 21; history, positive; ill, 5 months; temperature, 101°; pulse, 96; cough, severe; expectoration, 3 to 4 ounces mucous and muco-purulent; many bacilli; infiltration of left upper lobe with recent extension to left lower and right upper lobes; numerous rales in left upper lobe and few in right upper; weight, 121. On discharge: Treated 7 months; temperature, 102°; pulse, 100; cough, much decreased; expectoration, 2 ounces muco-purulent; many short, thick bacilli, also streptococci and staphylococci; breaking down with evidence of cavity formation in left apex, with some fibrosis; lower lobe clear and right lung nearly clear; weight, 128½. Result: Disease advanced in left upper lobe, but better in all other respects. Classed as unimproved.

No. 54—Age, 36; history, positive; ill, 2 years; temperature, 101°; pulse, 96; cough, moderate; expectoration, 2 to 3 ounces muco-purulent; many bacilli; right upper lobe infiltrated with evidence of softening in an old focus, many medium mucous rales; recent extension to middle lobe; weight, 102. On discharge: Treated 4 months; temperature, 100.6°; pulse, 90; cough, very severe; expectoration, 2 to 3 ounces muco-purulent; many bacilli; left upper lobe infiltrated with cavity present, rest of lung clear; weight, 105. Result: Grown worse.

No. 52—Age 38; history, positive; ill, 2 years; temperature, 99.6°; pulse, 84; cough, moderate; expectoration, 4 ounces mucous and muco-purulent; bacilli present; lungs, infiltration of left upper lobe with extension to lower, few medium mucous rales throughout and pleural rub at base; weight, 80. On discharge: Treated 8 months; temperature, 98.4°; pulse, 84; occasional hacking; expectoration scant; bacilli absent; lung clear; weight, 86. Result: Apparent recovery.

STAGE III.

No. 11—Age, 28; history, negative; ill, 2 years; temperature, 99.4°; pulse, 90; moderate cough; expectoration, 1 ounce muco-purulent; many bacilli present; left upper lobe infiltrated with cavity at level of second rib, many rales, right upper lobe infiltrated with rales; larynx infiltrated with ulceration of left cord; weight, 139. On discharge: Treated 3 months; temperature, 98.6°; pulse, 90; cough and expectoration both slightly lessened; bacilli present; dullness over infiltrated parts not so marked, respiratory note improved and rales reduced; larynx

healed; weight, 141. Result: Improved. Discharged two years; has done light work steadily since.

No. 23—Age, 19; tubercular history; ill, 2 years; temperature, 99.4°; pulse, 86; cough, moderate; expectoration, 1 ounce mucous and muco-purulent; sputum not examined; entire right lung infiltrated, with many rales; left showed recent invasion of upper lobe; tubercular ulceration of left side of septum; tonsils swollen to point of almost meeting and very painful; left one ulcerated; the tubercular character of these lesions was determined by the local reactions after administration of the watery extract of tubercle bacilli; weight, 147. On discharge: Treated 8 months; temperature, 98.4°; pulse, 75; no cough; no expectoration; left lung entirely clear; right showed slight rise of pitch on percussion at apex and few rales along sternal and vertebral border of lung; septal and tonsillar ulceration healed, and tonsils nearly normal in size; weight, 158. Result: Disease arrested. Discharged ten months; able to do hard day's work on ranch without tiring.

No. 26—Age, 17; history, positive; ill, 2 years 9 months; temperature, 99°; pulse, 88; occasional cough; expectoration, ½ ounce; bacilli present; right upper and middle lobes infiltrated, right lower lobe anteriorly; infiltration and fibrosis in left upper lobe with evidence of cavity; rales throughout infiltrated area; weight, after coming to California three months previously, had increased from 120 to 138, being 10 pounds above normal. On discharge: Treated 9 months; temperature, 98.4°; pulse, 80; few bacilli; slight cough and scanty expectoration; left lung clear, except at junction of bronchus; increased fibrosis; right upper lobe still infiltrated slightly, with few rales; weight, 134½. Result: Greatly improved.

No. 31—Age, 23; history, positive; ill, 21 months; temperature, 100°; pulse, 84; cough severe; expectoration, 4 ounces; bacilli and staphylococci present; infiltration of right upper lobe and left apex with recent extension to right middle and lower lobes; softening at both apices; weight, 128½. On discharge: Treated 4 months; temperature, 98.4°; pulse, 84; no cough; expectoration, ½ ounce; bacilli absent; left lung almost clear; right, slight infiltration at apex; weight, 139½. Result: Disease arrested. Discharged one year, still well.

No. 35—Age, 25; history, negative; ill, 7 months; temperature, 102°; pulse, 140; bacilli in great numbers; cough severe; expectoration, 3 ounces purulent; entire left lung infiltrated with recent extension to right upper and middle lobes; extensive softening, with cavity formation in left upper lobe; many coarse and medium rales throughout entire affected area; had suffered an acute attack of dilation of heart which had left the organ much weakened; weight, 118. Treated 10 months; temperature, 99°; pulse, 100; cough, occasionally; expectoration, 1 ounce; bacilli numerous; right lung nearly clear; much fibrosis through upper left lobe; few fine mucous rales throughout left lung; cavity nearly dry; weight, 145. Result: Very much improved.

No. 44—Age, 36; history, negative; ill, 8 years since first tubercular; temperature, 99°; pulse, 100; cough, severe; expectoration, 2 ounces mucous and muco-purulent; many bacilli; entire left lung infiltrated with recent extension to right upper lobe. Cavity in left upper lobe; many rales throughout left lung and right upper lobe; weight, 107½. On discharge: Treated 5 months; temperature, 98.6°; pulse, 90; bacilli present; cough, mornings, little during day; expectoration, 1 ounce; infiltration much less; rales fewer; right upper lobe almost clear; weight, 101 (loss due to worry and homesickness; after reaching home reached 112). Result: Much improved.

No. 59—Age, 20; history, positive; ill, 2 years; temperature, 102°; pulse, 100; cough very severe; expectoration, 4 ounces; bacilli present; infiltration of both upper lobes with extension to lower lobes posteriorly; fibrosis throughout right upper and middle lobes; many medium mucous rales over both upper lobes; cavity on right side at level of first rib; suffering from an acute exacerbation due to overexertion; weight, 120. On discharge: Treated 2½ months; lower lobes nearly clear; upper lobes much improved; cavity nearly dry; few mucous rales over upper lobe of left lung; weight, 125. Result: Greatly improved; weighs now, five months after discharge, 131.

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THE PREVENTION OF TUBERCULOSIS.*

By EDWARD VON ADELUNG, M. D.
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WHILE it is generally recognized both by the profession and by the public that consumption is a common disease, the great importance of tuberculosis in its relation to the public health is scarcely comprehended. Yet a very cursory examination of the subject suffices to reveal facts of a most alarming nature, and to render apparent the terrible mortality and the attendant economic waste caused by the tubercle bacillus.

STATISTICAL.

When one considers that autopsies reveal that nearly two-thirds of the human race are affected by tuberculosis; that the tubercle bacillus kills more than one-seventh of the race (which is a larger mortality than that of all the other infectious diseases combined); that pulmonary tuberculosis alone is responsible for 11% of deaths; that the mortality in the United States may be impressively expressed by stating that 150 American regiments march away each year to certain premature death; or to state it still more strikingly, that the equivalent of a city of 150,000 inhabitants is wiped off the map of the United States every year—when one considers these facts one begins to comprehend the stupendous proportions of the tuberculosis problem. These facts assume a still more cruel aspect when placed alongside the authoritative statement that "tuberculosis is not inherited, is acquired by direct transmission of the tubercle bacillus from the sick to the healthy, and is a distinctly preventable disease."

ANTI-TUBERCULOSIS MOVEMENTS.

For years, now, the anti-tuberculosis agitation has been continuous in Europe and America. Papers have been read, monographs have been written, societies have been formed, lectures have been delivered, sanatoriums have been built, resorts have been opened, fumigation has been practised, quarantine has been enforced, hygienic measures have been installed, congresses have been convened, all for the purpose of curbing the alarming havoc done by the tubercle parasite. And yet, quoting the words recently uttered by Dr. Hermann M. Biggs:

We still view with comparative indifference the ravages of a disease which causes from one-fourth to one-third of the suffering and death at the best period of life, and this, too, when the evidence at command should be conclusive to every reasonable mind that it can be mostly prevented at a comparatively small cost in sacrifice, labor and money.

* Read at the Thirty-third Annual Meeting of the State Society, Santa Barbara, April 21-23, 1903.

CALIFORNIA SHOULD COÖPERATE.

The problem is only just beginning to be grasped; the profession and the public are just beginning to realize the necessity of actually doing something besides talk. We, of the Golden State, are mere stragglers as yet in the war against tuberculosis. It is time we pressed to the front and raised our weapons in defense of ourselves and of our families against the great White Plague, a disease that is acquired almost entirely by the direct transmission of the tubercle bacillus from the sick to the healthy by means of the sputum, and therefore a distinctly preventable disease.

That this sentiment is shared by the profession was made evident in the replies I received to the 200 circular letters that were sent to the physicians of the city of Oakland. In answer to questions as to what prophylactic measures should be adopted besides requiring physicians to notify the Health Office of cases of pulmonary tuberculosis when accompanied by expectoration, and the proper fumigation of contaminated premises, a number of suggestions were called forth. The issuance of circulars carrying information regarding the proper disposal of sputum, and regarding general hygiene of consumptives, was favored in one form or another by nearly all. And nearly everyone advised that the city bacteriological laboratory should make free examinations for the tubercle bacillus.†

On the question of quarantining against tuberculosis, I was surprised to find the profession by no means agreed. While sixteen favored either national, state, or municipal quarantine, twenty-one were opposed to quarantine in any form. The profession appeared to be surprisingly equally divided.

Among other measures which received the support of a considerable number of correspondents were notification ordinances, fumigation ordinances, expectoration ordinances, the establishment of hospitals, colonies, or sanatoriums, and especially a campaign of education by means of circulars, the press, public lectures, instruction in the schools, and municipal nurses to visit tuberculosis premises for the purpose of teaching inmates personally the proper precautionary measures against the spread of the disease.

The Pennsylvania Society for the Prevention of Tuberculosis has distributed tens of thousands of educational tracts; New York, Boston, Chicago, Buffalo, and other cities have done the same. The German government recently distributed some millions of leaflets among its people, conveying information regarding tuberculosis.

† Such free examinations are now made by the Health Department for rich and poor alike.

SANITATION *versus* SANATORIA.

In many countries much importance has been accorded the establishment of sanatoria. But while the sanatorium is one of the most efficient means of combatting tuberculosis, it is neither the only means nor the most important in my estimation. Believing that "sanitation is more effective than sanatoria," I omit the discussion of the sanitorium idea, preferring to devote my allotted time to other measures that are easier of realization, susceptible of more general application and well worthy of serious consideration.

CLEAN CONSUMPTIVES NOT A MENACE.

Quoting Prof. Koch's words at the British Tuberculosis Convention:

A consumptive who coughs out tubercle bacilli is not necessarily a source of infection on that account, so long as he takes care that his sputum is properly removed and rendered innocuous.

And Dr. Hermann Biggs, of New York, a sanatarian of deservedly international repute, says:

If the matter coughed up be properly destroyed, a person suffering from consumption may frequently not only do his usual work without giving the disease to others, but also improve his own condition and his chances of getting well.

SPUTUM IS ONLY DANGER.

Without seeking further authority, I believe it may be safely assumed that *a consumptive is dangerous to those around him practically only through his sputum*. This being admitted, proper measures for combatting the disease suggest themselves immediately. Most of these measures are quite simple. In many of the leading cities, such as New York, Boston, San Francisco and Toledo, and, I am glad to add, Oakland, tuberculosis is a notifiable disease by law. And while it is desirable in all localities that physicians should be required to report tuberculosis patients, in many communities it would be unwise to attempt to secure such reports by any compulsory system until the majority of the physicians were in favor of such compulsory legislation. This policy was followed in New York City, where a tuberculosis notification ordinance was passed only after several years of voluntary notification, and not before the profession had become somewhat prepared for the measure. Furthermore, it would seem wise to require notification only of cases of tuberculosis of the respiratory tract, and of these cases only when accompanied by expectoration; for practically, it is only cases of tuberculosis of the respiratory tract accompanied by expectoration that are a menace to the public health.

A city that requires notification of tuberculosis should, if possible, also provide a bacteriologist

to assist in the diagnosis, by making free examinations of sputum for the tubercle bacillus. By this means it has been found that not only are many tuberculosis cases diagnosed early, which is of immense importance to patients, but the health department incidentally learns of many cases which would otherwise escape its notice.

EXPECTORATION REGULATIONS.

In view of the importance of destroying tuberculous sputum, anti-expectoration legislation assumes considerable importance. A large number of cities of this country now have statutes prohibiting expectoration in public places, and the impartial enforcement of these laws in America, against rich and poor alike, has provoked complimentary comments from the highest European authorities. The enforcement of such laws is especially desirable during the summer season when the sputum accumulates and dries quickly, and dust fills the air. As a valuable, if not necessary, adjunct to the efficiency of such expectoration laws, the providing of a sufficient number of conveniently placed public cuspidors is earnestly recommended. Many people are obliged to spit while in public places, and since spitting on the street is but little less sanitary than spitting on the sidewalk, public cuspidors, properly supplied with some fluid, and frequently cleaned, appear to be a very efficient means of meeting the problem. Expectoration regulations should be extended so as to apply to all public conveyances, hotels, lodging houses, churches, halls, etc.

FUMIGATION.

Fumigation, usually the first measure to be applied to the tuberculosis problem, when done intelligently, using formalin solution, and especially if conjoined with scrubbing and general renovation, is both simple and efficacious. As a routine protective measure not alone against tuberculosis, but against all the communicable diseases, fumigation of second-hand clothes, furniture, bedding, books, etc., should certainly be required before they may be offered for sale, whether in regular stores or at rummage sales.

CLEAN FOODS.

It is unnecessary for me to speak of food inspection, as the importance of that subject has been well recognized. But it may not be amiss, especially as it is probable that the tonsil is a portal of infection, to call attention to the careless practice of exposing to the dust of the streets fruits and other foods that are commonly eaten without being cooked. If for no other reason than simple cleanliness, dealers should be required to protect such foods from dust contamination more thoroughly than is done at present.

QUARANTINE CONDEMNED.

Quarantine, isolation, placarding and kindred measures applied to tuberculosis, I mention merely to condemn. They are disapproved by such authorities as Prof. Koch, Hermann M. Biggs, S. A. Knopf, T. Mitchell Prudden, Geo. F. Shrady, Geo. H. Simmons, Geo. M. Gould, and others equally eminent. Aside from the oftentimes great difficulty of diagnosis in the early stage; aside from the impracticability of enforcing quarantine measures against the thousands of persons entering the United States or any one state, or even city; aside from the inhumane character which it assumes in separating families, relatives and friends; aside from all these objections and others, quarantine is to be condemned *because it is eminently unnecessary*. As pointed out before, a consumptive who disposes of his sputum properly in no way endangers those about him, and quarantine is no more necessary in his case than in a properly conducted case of typhoid fever. In the one case the germs are carried by the sputum, in the other by the dejecta.

ISOLATION AND PLACARDING CONDEMNED.

And so, also, in regard to isolation of consumptives and placarding their homes, these measures are onerous, repulsive and entirely unnecessary, save possibly as disciplinary measures in those special cases where the expectoration regulations are persistently violated. I believe that the public should be taught to regard consumption in its true light—as a disease that can be avoided without ostracizing consumptives; as a disease that is curable certainly in the early stages by the simplest means—and not as a monster at the sight of which they should flee.

We, ourselves, should be careful to avoid speaking of tuberculosis as a "contagious" disease. To call it "contagious" is to place it in the same class with diphtheria, scarlet fever, smallpox, etc., in which very limited contact, or even simple proximity, may result in their transmission, *which is not true of tuberculosis*. Every intelligent person, even laymen, knows that tuberculosis is not contagious in that sense. The distinction should be kept clear and definite. Tuberculosis is a communicable disease, but not a contagious disease in the ordinary understanding of that term.

MORE SUN, MORE AIR; LESS ALCOHOL.

Our people (and, I suspect, our profession) need to give more importance than they now do to efficient prophylactic measures of a broader scope than those mentioned in the preceding

pages. The baneful effect of alcohol in reducing the systemic resistance to the invasion of the tubercle bacillus needs to be dwelt upon. It has been shown that the increase of mortality from tuberculosis in France is in exact proportion to the increased consumption of alcohol. If the fight against tuberculosis is to succeed, our people must have more sunlight, more fresh air, with fewer working hours and less alcohol. The reduction of the working hours effected by the labor unions is assisting, no doubt, in the reduction of the mortality from tuberculosis.

BETTER HYGIENE THE BASIS.

Our homes should not be built on small lots, but space for air and sunshine should be demanded. Rooms that get no sunshine are unfit for human habitation. It is probable that at a future date a well will be devised to lead the sunshine from the roof and distribute it among the rooms of buildings when sunny windows are impossible. I regard the recent lowering of the ceiling in our modern architecture as pernicious, and prophesy that the day will come when people will refuse houses with low ceilings. Some one said that the change simply avoided space for dead air. It may get rid of dead air, but it brings dead people instead.

Certain it is that darkness, dampness, lack of ventilation, uncleanliness, and excesses of all kinds (but especially alcoholic) are the handmaids of tuberculosis. Sunshine, fresh air, cleanliness and temperance are its arch enemies. Let this creed be once well instilled and the people will quickly work out their own salvation.

With regard to tuberculosis as in relation to most of the communicable diseases, the principal preventive measure and most rational prophylactic course is to secure and maintain a good index of resistance in each individual. Here we enter that large field of sanitation that deals with drainage, sewage, ventilation, diet, light, exercise, etc., on many points of which I have already touched.

Conceived largely, suffering and premature death are punishments for the transgression of natural law. And so tuberculosis is a ministering angel in disguise, for it tends ultimately to force better drainage, better dwellings, better modes of living, more fresh air, sunshine, cleanliness, rest and recreation. This is the final conception of the tuberculosis problem. Notification, fumigation, medication and all such measures are mere makeshifts valuable to meet the exigency; but the solution of the problem is undoubtedly to be sought within the broad lines of hygiene and sanitation.

THE CORRECTION OF DEFORMITIES FOLLOWING ANTERIOR POLIOMYEL- ITIS BY SUBPERIOSTEAL IMPLANTATION OF TENDONS OF UNAFFECTED MUSCLES.*

By JAMES T. WATKINS, M. D., San Francisco.

Assistant Orthopedic Surgeon to the Children's Hospital, etc.

THE object of the present paper is to direct attention to a rational and efficient method of treating a group of cases which has proved intractable to other methods. Only the clinical aspects of the subject are dealt with; its purely scientific side, the experimental study of the histology of tendon-grafting and of the sub-periosteal implantation of tendons, must be considered at another time.

Permit me first to outline the pathological conditions to be considered and the treatment which has led up to our present methods.

Briefly, infantile paralysis is an acute inflammation, possibly infectious, involving certain ganglia in the anterior horns of the spinal cord; which are the motor and trophic spinal centers.

As a consequence of the inflammation, possibly of pressure due to interstitial edema, one or more groups of cells are completely absorbed; others may be partially destroyed; however, most of the affected groups recover. The muscles governed by the first set remain permanently paralyzed; in the second case they are paretic; in the third, function is restored.

Characteristic of acute anterior poliomyelitis is the disturbance of nutrition which appears almost immediately after the onset of the disease.

The limb is cold, blue, edematous, glossy, and the atrophy is altogether too great to be accounted for by mere loss of function.

The deformities secondary to acute anterior poliomyelitis result from the use of the limb in a vicious position. It must not be forgotten that improper function is not the result of deformity, but that *deformity is the result of improper function*.

The functional contraction of muscles whose antagonists have remained paralyzed, as well as their inherent elasticity, the action of gravitation and mechanical elements, such as the weight of bedclothes, are factors to be considered among the predisposing causes of deformity.

The orthopedic surgeon usually sees patients suffering from infantile paralysis after the appearance of the deformity. The problem which then presents itself is two-fold: First, the correction of secondary deformities, and second, the restitution of function. Formerly it was customary to apply portable apparatus to the limb without attempting to correct its deformity. This

is the mode of treatment still practiced by a German "bandagist," Herr Hessian. The result of such treatment is to transform a partial cripple into a complete one. A great step in advance was the forcible remodelling of the member, combined with subcutaneous or open division of those ligaments, tendons, fascia and muscles which could not be stretched. Plaster of paris was applied and the patient directed to go about in it, thereby employing his own weight to remodel the distorted bones into their proper relations. Subsequently, simple sheath splints were applied and so adjusted that the weight during use of the limb constantly acted to oppose a return of the deformity. This is the treatment employed by Professor Lorenz, who lately visited this section of the country. It is excellent as far as it goes. It aims at correcting the deformity and at giving the patient a limb upon which he can get about. Its disadvantages are that apparatus cannot be wholly dispensed with; and where there is apparatus there is atrophy. In all cases the liability to the return of deformity is constant and calls for unremitting vigilance on the part of the patient and of the physician. Finally the return of function is less complete than it need be. As good a result may be obtained, in selected cases, by operative stiffening of the affected joints, "Arthrodesis." This operation finds its warmest advocates in Robert Jones of Liverpool, and John Dane of Boston. It is really a very conservative resection of the joint surfaces in which the articular cartilages are peeled off, and the two freshened ends of the bones maintained in apposition till union between them has taken place. There can be no question that in the treatment of flail joints—joints all of whose muscles are paralyzed—this operation may be employed, usually in combination with some simple apparatus, to advantage.

A further advance in the treatment of paralytic deformities was made twenty years ago by Nicoladoni when he attempted to *replace* the lost power of a paralyzed gastrocnemius by implanting into the tendo Achillis the tendons of the long and short peroneal muscles. The result was not permanent, and the operation found so little favor that, in 1897, Vulpius could find only 33 reported cases, (sixteen of which were attributed to Drobniak and four to Goldthwait.) But of late years orthopedic literature teems with reports of cases treated this way.

The accompanying scheme of the different ways in which the force of healthy muscles can be transmitted in whole or in part to a paretic or paralytic one explains itself. In each instance, the paralyzed or paretic tendon is indicated to the left of the healthy one. In the first diagram the source of power is functionally unimportant. In the second and third the source of power is func-

* Read at the Thirty-third Annual Meeting of the State Society, Santa Barbara, April 21-23, 1903.

tionally important. It cannot be totally dispensed with. If one is going to do a tendon graft, the last scheme in the first and third diagrams is the rational one to employ. The technic of the operation is simple. The secondary deformity is first corrected, or over-corrected. This may require a preparatory operation under narcosis. In that event the limb is put up in plaster of paris in over-correction, and the patient encouraged to employ it functionally during two or three weeks. In this way the tissues are stretched till their elastic recoil towards deformity has disappeared. At a second operation the sheaths of the tendons are laid open by free longitudinal incisions, the fascia between their sheaths undermined by blunt dissection, and the tendon, or portion of tendon, to be implanted into the other is drawn through the new opening. There are several ways of uniting the tendons. A good method is to button-hole the uncut tendon once, and, if possible, twice, and draw the first tendon through the loops, as shown in the fourth diagram. The

The cross suture indicated in the fourth diagram is the one suggested by Vulpius. It is excellent. After the external incision has been closed, the wound is dressed aseptically and the limb put up in over-correction in a plaster of paris dressing. This is left intact from four to six weeks. After-treatment in the form of massage and gymnastics may or may not be indicated till the patient is discharged cured, with some supporting apparatus.

The closer examinations of many reports of operations performed by the tendon-to-tendon suture does not throw much light upon the results obtained. Oftener than not the writers confine themselves to the simple chronicling of what they call a "good result," a "satisfactory result." But what they mean by a "good result" they do not say. Whether a "good result" signifies that there is no return of the deformity or that there is a complete or almost complete restitution of function, the report does not show. It is probable that a very much smaller percentage of good results would be recorded were those cases discarded whose casual lesion was other than that of infantile paralysis, and the percentage would be still further reduced were more time allowed to elapse between the operation and the report of the case. It has been the privilege of the writer to discuss and compare the results of the leading orthopedic specialists in this country and in Europe, and, making allowances for individual optimisms, there has seemed to be a fairly universal dissatisfaction with results obtained by the older methods. The causes of failure may be divided in three groups, functional, technical and pathological. In the first group, a negative result may be due to employing too weak a muscle to do the work of a powerful one. For example, in Nicoladoni's first case he attempted to replace the calf muscles of a person sixteen years old by means of the peroneal muscles. But in computing the relative strength of the muscles of the leg, the combined strength of the peroneals is computed by Fick of Leipsic at .173 kilogrammetres while the gastrocnemius and soleus are known to be three times as strong as the sum of all the other leg muscles or more than 20 kilogrammetres. This taken with the fact that the patient had reached an age (16) when the body weight could have approximated that of an adult, may explain why the result, which at first was very good, gradually disappeared. It is true, however, that this same operation when undertaken in young children has proved successful. Again, it is still a debatable question, if we attempted to replace a muscle by one of a widely different or antagonistic function, whether the latter will perform the function of the former, except by a special effort of volition.

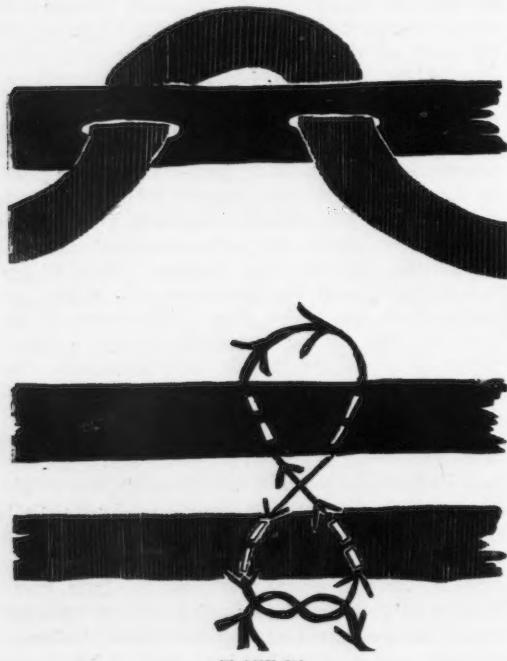


PLATE IV.

sutures are best applied at the points of emergence and entrance, indicated by the crosses. In tendon-suturing the aim is to obtain the maximum amount of coaptation with the minimum disturbance of nutrition. Sewing with the intention of an immediate pull is secondary. It is indeed questionable whether union would take place between tendons while in a state of tension.

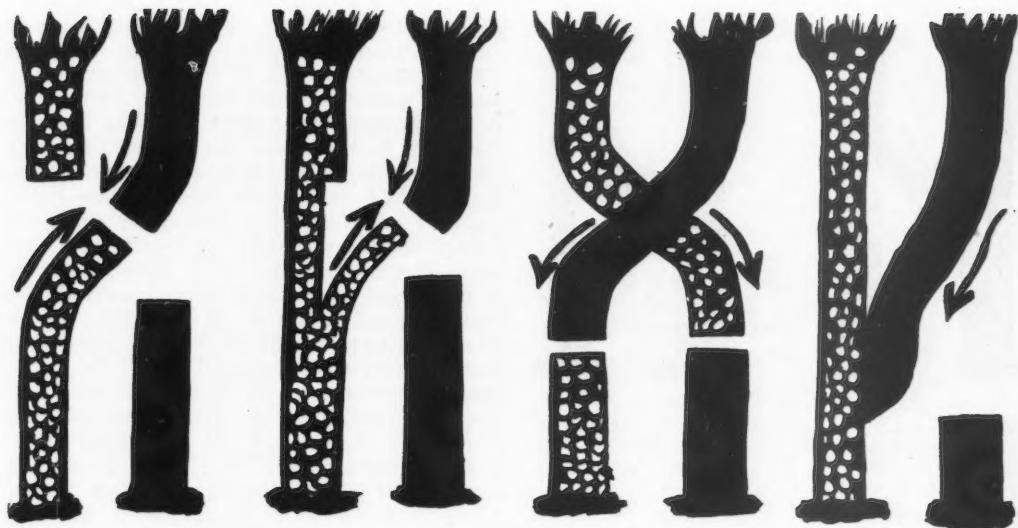


PLATE I.

Technical defects are errors in sewing, failure to unite the muscles so that after the removal of the plaster of paris, they will be under a sufficient tension, and so attaching the tendons that the pull of the active muscle is not exerted in the direction of its muscular contraction.

The pathological cause of failure is seen in the fact that through destruction of the trophic centers of the cord, an atrophy has resulted which is out of all proportion to the atrophy which would follow disuse alone. If a patient has suf-

fered paralysis at, say the age of eighteen months, and no treatment has been attempted from that time until the patient is past the age of puberty, and then the tendon, atrophied both from disuse and from disease, has suddenly to perform its full function, it is reasonable to expect that, except in the simplest cases, the tendon will not withstand the strain put upon it. As a matter of fact it does not do so. It stretches between its insertion and the site of the tendon suture.

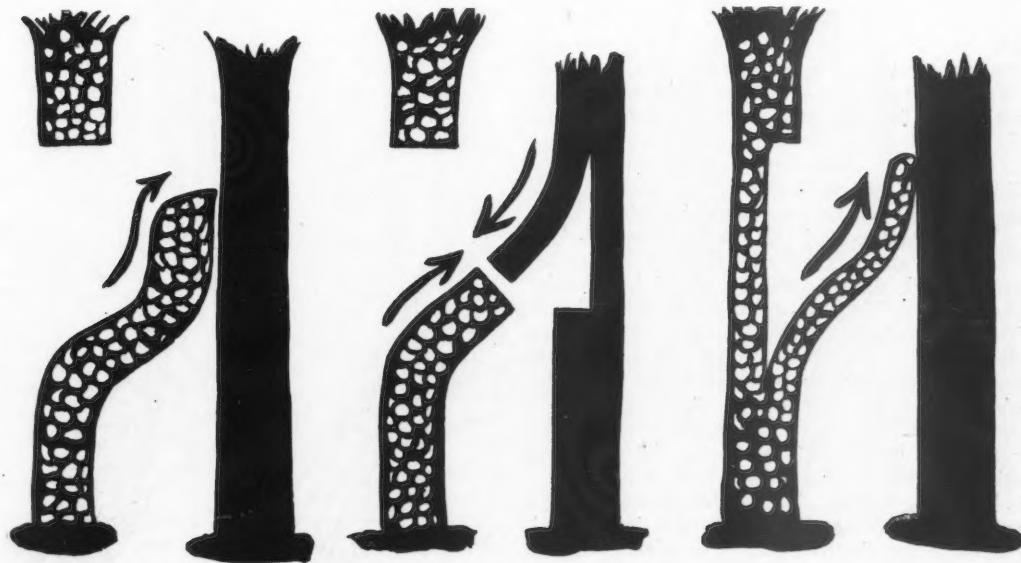


PLATE II.



PLATE III.

I would not be understood to repudiate altogether this operation, nor to deny that, in the hand, and, in less aggravated cases, in the foot, it may be successful. But, in a large proportion of cases its result must, from the nature of the pathological changes present, be transitory, and, to be successful, must necessitate one feature which the operation was devised to obviate—the wearing of apparatus.

The writer was induced by these considerations to advocate the method of periosteal, or subperiosteal, implantation. This operation was unsuccessfully attempted in 1894 by Drobnick. Lange of Munich has been more successful with it. It consists in freeing the whole or part of a healthy tendon from its insertion and attaching it to that bony point where it will obtain the best leverage, first in combating the tendency to deformity and secondly in restoring function. In the fifth diagram, a paralysis of the extensor communis digitorum is assumed, with consequent talipes equino-varus. In the figure to the right, the outer half of the tendon of the active tibialis anticus is grafted to the tendon of the paralyzed extensor communis. In the figure to the left, following the newer method, the outer half of the tendon of the tibialis anticus is attached to the external aspect of the cuboid.

The advantages of this method are two-fold: First, the employment of only healthy tendon, and second, the freedom permitted in choosing the site for the attachment of the new muscle. The completeness of the result will depend upon the degree of tension ultimately obtained for the new muscle—the tension under which it will begin to contract. An exact technic is therefore necessary. The very great majority of cases occur in the muscles of the leg so the technic of operations on these muscles will be considered.

Lange performs, almost without exception, a preliminary operation in which the deformity is overcome and the foot put up in plaster of paris in correction or over-correction. Two weeks or a month later, under strict asepsis, an incision

over the length of the tendon opens the sheath from its insertion to the ligamentum arcuatum. The whole or the part of the distal end of the healthy tendon is freed from its insertion and drawn through its compartment in the ligament. The split in the tendon may be carried up to the appearance of the muscular fibres. The foot is next held in the corrected position by an assistant and that point determined where the tendon would exert the most direct pull in the sense of correcting deformity. Here an incision is made, and deep subcutaneous communication between it and the upper end of the first incision. A needle threaded with No. 8 silk is carried in a basting stitch from the distal end of the tendon up one side and down the other, never completely piercing it, both ends of the silk being left long. (See sixth diagram.) The periosteum at the site of the proposed attachment is split in the line of the external incision and freed from the bone for a distance of 2 cm. The tendon having been drawn through the subcutaneous tunnel, the long ends of the silk suture are now threaded on needles and a basting stitch employed in carrying each through a flap of periosteum, care being taken to pass the needles through it first from within out, so that, when the sutures are subsequently drawn tight and tied in the lower end of the wound, the end of the tendon will be applied to the denuded bone. (This is indicated in the seventh diagram.)



PLATE V.

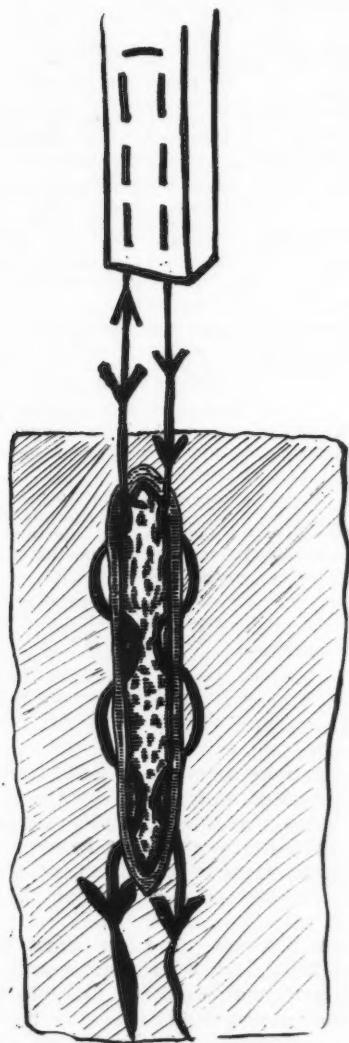


PLATE VI.

During this part of the operation and the subsequent steps, the foot is held in over-correction by the assistant. The skin wounds are closed with silk, a gauze wick being left in the upper end of the large wound, and a sublimate gauze dressing applied, then absorbent cotton and over it plaster of paris. When the plaster has set, a large fenestrum is cut out over the dorsum of the foot and the cut edges of plaster turned out. The plate of plaster which has been removed in making the fenestrum is then reapplied and fixed in place by a starch bandage. After three days the gauze wick is taken out and several days later the skin sutures. The plaster dressing is not removed for a month or six weeks.

To assure its asepsis, the silk is boiled for ten minutes in corrosive sublimate solution 1-1000, and is removed from the solution by the operator at the moment when he will use it. The greatest care is taken to prevent the tendon from twisting in its passage through the tunnel made to transmit it to its new insertion. The excellence of the final result is believed to be, within reasonable limits, proportional to the tension of the new muscles when called upon to do work, and to the directness with which the tendon passes from the muscle to the point of insertion.

When a result has held its own during nine months of functional use of a member it may safely be classed as permanent. In support of the permanence and excellence of the operation a skeleton report is added of an examination made by the writer of six of Lange's cases.

(See next page.)

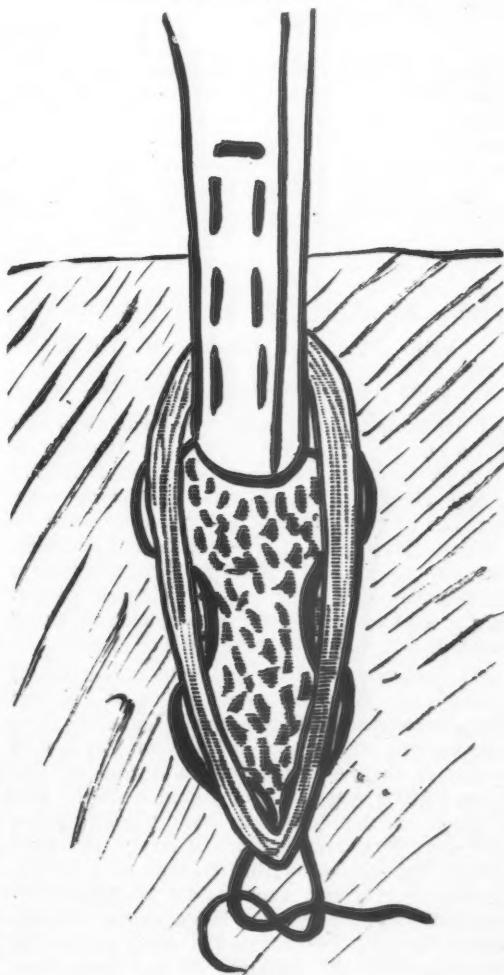


PLATE VII.

EXAMINATIONS MADE BY THE WRITER MARCH 14, 1901.

| DEFORMITY. | PARALYSIS. | OPERATION AND DATE OF SAME. | RESULT. | |
|------------------------------|---------------------------|---|---|---|
| I. Str. boy. Aet. 8. | Pes equinus. | Tibialis anticus. Extensor of communis digi- torum. | October, 1899. Peroneus lon- gus implanted into scaph- oid. Peroneus brevis in front of malleolus to cuboid. | Seventeen months after operation. Foot hangs in varus, which dis- appears on standing. Good flexion and extension. Walks comfort- ably without apparatus. |
| II. Frl. L. Aet. 16. | Talipes equin- valgus. | Hallucis longus. Tibialis anti- cus. Extensor communis digi- torum. | Peroneus longus to scaphoid. Peroneus brevis to cuboid. | About eighteen months after oper- ation. Foot hangs in varus. Volunteers the information that whereas she could walk before the operation only for a few min- utes at a time, she can now walk for hours. |
| III. Herr. H. Aet. 23. | Pes equinus. | Tibialis anticus. | October 7, 1899. Manual cor- rection of deformity a month earlier. Peroneus longus to scaphoid. | Seventeen months after operation. Flexion and extension of 20 to 30 degrees, estimated. Patient is delighted with result. |
| IV. Bulher. Aet. 8. | Talipes equino- varus. | Hallucis longus. Extensor digi- torum peronei. | Outer half of tibialis anticus implanted into cuboid. | Good flexion, extension, abduction and supination. Slight voluntary motion in sense of pronation and abduction. |
| V. Ludwig. Aet. 15. | Talipes equino- varus. | Hallucis longus. Extensor digi- torum peronei. | February 18, 1899. Manual correction of deformity one month earlier. Tibialis anti- cus tendon split and outer half attached to cuboid. | Two years after operation. Forty degrees of flexion and extension, abduction and supination; normal perceptible pronation and abduc- tion against gravity. |
| VI. Girl. Aet. 14. | Talipes equino- varus. | Extensor longus digitorum long and short pero- neal muscles. | Outer half of tibialis anticus to cuboid. | Two years after operation. Flexion, extension, abduction, supination. Distinct abduction from the indif- ferent position. Patient volun- teered information that during the past summer she had been on mountain walks with her friends |

THE CLIMATE OF SANTA BARBARA
AND ITS FOOTHILL REGION.*

By C. M. RICHTER, M. D., San Francisco.

IT IS quite an easy matter to write an article on climate, or on the climate of a certain locality by enumerating the figures of the different climatic elements, and furnishing comparisons of these figures with those of other localities. However, if one undertakes to scrutinize and to explain in detail the advantages or disadvantages which certain climatic factors in a given locality exercise on people living there, one will find this to be quite another matter.

At once one is confronted with mountains of possibilities caused by combinations of different climatic elements as they present themselves from time to time on any spot of the earth. And how—this is the next question—will this or that human being react on such combinations? Any explorer in this field will soon become aware that his work must reduce itself to the most modest statements, as the reaction of a certain individual on certain combinations of climatic elements must remain, to a large extent, an unknown factor. For instance, I refer you to the importance of the humidity of the atmosphere in its relation to the animal organism.

And, speaking of this climatic factor, how can one neglect to-day the importance of atmospheric electricity? Humidity, temperature, and air pressure, as the most recent investigations indicate, seem to be indirect, or at least in some relation to the electricity of the air we breathe.

And what do we yet know about the conditions of electricity which our mucous membranes possess and present to the incoming air and to the incoming food?

Perhaps all climatic factors that we now consider as such, are only secondary in importance to this factor of electricity. There is still a vast difference between the pretensions of the climatologist and the sober facts that he can present for consideration, and if I speak of the climate of Santa Barbara to-day, it is with a full understanding of how crude any such attempt must be while so many questions still remain unsolved. Heretofore we have always considered temperature and humidity the two principal climatic elements. But, if we wish to compare the temperature of Santa Barbara with that of San Diego we must be able to prove that the method of taking the temperature in the two places admits of such comparison. But the thermometers from which the temperature is read are about 20 feet above ground at Santa Bar-

*Read at the Thirty-third Annual Meeting of the State Society, Santa Barbara, April 21-23, 1903.

bara, 94 feet at San Diego, 7 feet at Pine Crest near Santa Barbara, and 74 feet at Los Angeles. 69 feet at Jacksonville, and I cannot tell how high at the Riviera.

It is most important to consider the height of the thermometer above ground as recent investigations by Seeley (*Monthly Weather Review*, Nov. '01) prove. Seeley put one minimum thermometer at the lowest point of a swale surrounded by hills, one on the hilltop about 15 feet above, and one on a wooden frame 30 feet high on the hilltop. The average of the readings of the thermometer in the free air on six clear, still nights in January was 14.5°, or 6.3° higher than the average on the hilltop, and 8.8° higher than in the swale. In a dry climate there may be a minimum as high as 40° five feet above the ground and frost on the ground below. The higher we put the thermometer above the ground where radiation is more intense, the higher will be the temperature it indicates—generally. It is clear then that a correction should be applied to the temperatures of stations where the thermometers are not at the same height above ground.

How much higher would the minimum temperatures of Santa Barbara be than those of San Diego for instance, if the thermometers were on the roof of the Potter Hotel instead of, as at present, 20 feet above ground one mile or more from the shore? Including the cold February of 1903 the absolute minimum temperature from beginning of observation, read at San Diego, is 32°, at Los Angeles 28°, at Santa Barbara 28.5°, at Pine Crest, two and a half miles north of Santa Barbara (elevation 1000 feet), 31°; at Jacksonville, Florida, 10° (1899). We may rightly assume that these minimum temperatures of San Diego, Los Angeles and Jacksonville, to be compared with those of Santa Barbara and especially of Pine Crest, should be put several degrees lower than they are given.

The absolute minimum read at Auburn (Northern California, elevation 1360 feet) is 12°, at Sacramento 19°, at San Jose 18°. For mean of the absolute minimum see table 2.

These temperatures of Santa Barbara and Pine Crest, if the proper corrections were applied, would also be several degrees higher. For mean minimum temperatures, which represent the mean of the minimum temperatures of every day of a month, see table 3.

These figures exhibit strikingly the superiority of the winter climate of the foothill region of Santa Barbara above that of any other station named herein as far as minimum temperatures are concerned. Not less apparent will this be from the figures for the cold February, 1903. See table 4.

Undoubtedly it is the minimum temperature that is of paramount interest to the climate seeker. He wishes to know where he will find comparatively the least cold weather during the winter, and no doubt the foothill region near Santa Barbara has, in our list, the highest minimum temperatures during the winter months. For the invalid who wishes to select a health resort, the two greatest bugaboos are the frost on the ground and the fog in the air around him. He little considers the fact that the ground by radiation, may cool considerable more than the air he is breathing, and that the formation of frost and often of fog, will depend on the temperature and relative humidity of the air next to the ground.

It will be interesting to look at the table (Weiss) where "s" stands for the degree of saturation of the air with aqueous vapor, and "t" for that temperature of the air from which, by cooling, the freezing of water is still possible. See table 5.

If, therefore, the relative humidity of the air on a winter morning were only 15%, the temperature of the air could be 45°, and still there could be frost on the ground. This explains how wrong it often is to judge from the frost on the ground of the temperature of the air we breathe. During February, 1903, Los Angeles had heavy frost on ten mornings, San Diego on two, and Pine Crest light frost only on six mornings. But it would be necessary to give the figures of moisture on such mornings for a proper understanding.

The temperature we feel, the "sensible" temperature, depends principally on the conditions of wind, humidity, and temperature combined. Cold days, with comparative absence of wind, are easily borne. Fog alone does not cool our skin sensibly, but a sufficient wind velocity will make us look at fog as a real menace. Equally, we measure the heat with our skin by the amount of moisture and the wind velocity of the air. Hot days, with small relative humidity and a light wind, do not affect us very unpleasantly. The lower the relative humidity the greater is the possibility of perspiring, and the greater is the relief from the intensity of the heat. A temperature of 90° or above, rare as it is at Pine Crest, is generally accompanied by a wet bulb temperature of only 60° to 70°, and loses in this proportion the character of oppressive heat.

For the "cold" days I have already given some figures. "Hot" days we may call days with a temperature of 90° or above. I counted for the entire period from August 1, 1897, to May 1, 1902, as "hot" days, 5 at San Diego, 17 at Santa Barbara, 67 at Pine Crest, 79 at Los Angeles. But we shall soon see that San Diego pays for this excellence by rather high velocity of wind,

and that at Pine Crest the unwelcome burden is lessened by small relative humidity.

The absolute maximum temperatures are shown in table 6.

The mean of absolute maximums is shown in table 7.

The mean maximum temperatures are shown in table 8. This table shows clearly the absence of great summer heat at Santa Barbara, Pine Crest and San Diego, and also their advantages during the winter. But this is not fully understandable without the figures for humidity and velocity of wind.

The mean relative humidity is shown in table 9.

Wind, average velocity in miles per hour, table 10.

For seasons we have table 11.

The excellence of the climate of Santa Barbara and its foothill region is clearly demonstrated by these figures, but from table 12 the great dryness of the air found at Phoenix for instance, will appeal to every practitioner as a *pium desideratum*, not found at Santa Barbara. But let us take for instance, this year 1898 for comparisons. Table 12.

For the invalid we demand a climate which will give him the greatest comparative possibility to remain outdoors, summer or winter, night or day, with comfort, in a relatively pure air. All climatic elements, principally temperature, humidity and wind, must combine in such a manner that this comfort is attainable. An extreme dryness of the air, as Phoenix represents, is combined in 1898 with 153 days of the year with a temperature above 90°, and 19 days with a temperature below 32°. Santa Barbara had in that year 5 days above 90° and none below 32°. The mean minimum for Phoenix (winter) is not quite 37° and for Pine Crest over 50°. This must appeal to our judgment. An invalid, who is able to sleep outdoors summer and winter in the same locality with comfort, as he can at or near Santa Barbara, will and must give preference to the latter. He will find in the Santa Barbara foothills the warmest winter nights he can find in California and on the mainland of the United States—the most southern part of Florida, near Key West, excepted. He will be favored here, at the same time, by a minimum of wind movement and low relative humidity (55% in winter).

And still there is fog to be found here on many a morning. The number of days with fog includes at San Francisco only days with a "dense" fog at morning and evening observation. At San Diego and Los Angeles probably the same routine in judging the fog day is followed. Los Angeles has an annual average of 57 foggy days and San Diego of 14 days. Continuous records for Santa Barbara are missing, but Pine Crest, overlooking Santa Barbara, had only 5 foggy days during 1898.

When fog prevails on land the temperature near the ground is always lower than at some distance above ground, and this is a causative factor of fog. The greater cooling of the air nearest the ground by the greater radiation from the soil helps to form fog. This kind of fog seldom forms in the valley of Santa Barbara, and hardly ever in its foothill region. The fog observed at Santa Barbara is almost invariably drifting in from the ocean where currents of a different temperature, and the difference of the temperature above the water and above the nearest coast help to give conditions for frequent fog. Such fog contains dust particles only to a very small degree and will be little irritating to those who live in it.

Land fog with its dust particles must have a different effect on our mucous membranes. The ocean fog is common on the Pacific Coast in summer time and rather rare in winter time. At Pine Crest (a five years' average) one may expect fog on three to four mornings for one hour or longer every winter and spring month, and every second or third day every summer and fall month. Before 9 A. M., during summer and fall, the fog is generally dispelled. As there are only about thirty rainy days in the year at Pine Crest, one may well be pleased to have this light fog on twenty mornings of the six winter and spring months instead of rainy days, and to have the summer fog for the morning hours instead of heavy showers.

For Southern California the existence of fog means just what it may be proud of, namely, a cool summer temperature, sufficiently cool to make the existence of fog possible. Of course the fog removes a fraction of available sunshine for the day. But let us look at the figures for clear days. (Table 13.)

We find Santa Barbara ahead of the others in clear days and still with a summer not many degrees warmer than that of San Francisco. Santa Barbara has an average of three days with a temperature of 80° or above in July, six in August, five in September, four in October, three in November; but only on three days in the year the temperature may reach 90° or above.

The air at Santa Barbara must be remarkably pure as the wind direction determines an average of an incoming ocean air current for the entire year. Of course the character of a sea and land breeze is as noticeable here as at San Diego. We find at Santa Barbara a day breeze from the ocean, and from evening to morning an oceanward breeze from the Santa Ynez mountains, principally a northerly air current. The entire wind movement of Santa Barbara, compared to that of San Diego, is very small. Still, the nearness of the mountains, 4000 feet high, having their crest* in an air line only four miles

from shore makes "Foehnwind" possible, and on a few days of the year, for one night, or, perhaps, for one day, a disagreeable sandstorm may result. This may also happen when a strong wind from the east brings the sand of the Mojave desert over the town.

But the entire movement of the air will only once in two years amount to 300—350 miles in 24 hours, equal to 10—15 miles an hour, as San Francisco may have as an average for every summer day.

If we consider then once more the comparative purity of the air and absence of wind, the great amount of sunshine, the small relative humidity, the very high winter and the comfortably low summer temperatures, we must admit that among all known health resorts Santa Barbara and its foothill region deserves the palm. Nowhere else in the United States, in Europe, or elsewhere may the invalid find as great a chance as here to remain outdoors with comfort, in constant contact with pure air, summer and winter, night and day.

MEAN RELATIVE HUMIDITY. (Since observations began)

| [§] | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year |
|--------------------|------|------|-------|-------|-----|------|------|------|-------|------|------|------|------|
| Boston..... | 72% | 71% | 68% | 66% | 71% | 72% | 71% | 75% | 77% | 75% | 75% | 71% | 72% |
| Denver..... | 53 | 55 | 51 | 50 | 52 | 46 | 49 | 44 | 44 | 45 | 47 | 50 | 49 |
| Fresno..... | 82 | 72 | 68 | 57 | 52 | 40 | 33 | 35 | 43 | 56 | 66 | 82 | 57 |
| Jacksonville..... | 80 | 79 | 76 | 73 | 74 | 79 | 80 | 81 | 83 | 81 | 82 | 82 | 79 |
| Los Angeles..... | 67 | 69 | 72 | 73 | 76 | 75 | 76 | 76 | 73 | 75 | 66 | 63 | 72 |
| Phoenix..... | 52 | 47 | 38 | 32 | 27 | 23 | 26 | 43 | 39 | 41 | 44 | 41 | 39 |
| Red Bluff..... | 80 | 69 | 65 | 58 | 54 | 42 | 33 | 35 | 42 | 52 | 65 | 80 | 48 |
| St. Louis..... | 74 | 74 | 71 | 65 | 68 | 68 | 66 | 67 | 69 | 66 | 70 | 74 | 69 |
| San Diego..... | 71 | 71 | 74 | 74 | 77 | 78 | 80 | 80 | 80 | 77 | 70 | 68 | 75 |
| San Francisco..... | 80 | 78 | 77 | 78 | 79 | 80 | 84 | 86 | 81 | 79 | 77 | 80 | 80 |
| Santa Barbara..... | 69 | 69 | 70 | 71 | 73 | 74 | 76 | 75 | 74 | 72 | 67 | 64 | 71 |
| Pine Crest..... | 59 | 59 | 61 | 68 | 70 | 70 | 69 | 69 | 63 | 64 | 57 | 48 | 63 |
| Cannes..... | 71 | 74 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 72 | 73 |
| Algiers..... | 73 | 72 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 68 | 73 | 73 |
| Cairo..... | 70 | 69 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 76 | 70 | 70 |
| Davos..... | 84 | 81 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 81 | 82 | 77 |

[5] Table (Weiss) referring to the possibility of frost on ground, when temperature is relatively high.
 5—degree of saturation of the air with aqueous vapor, per cent.
 4—that temperature of the air from which, but only just, the freezing of water is still possible.

—that temperature of the air from which by cooling the freezing of water is still possible.

| | | | | | | | | | | | |
|-----------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| s— | 100% | 90% | 80% | 70% | 60% | 50% | 40% | 30% | 20% | 10% | 0% |
| t— | 32° | 33° | 34° | 35° | 37° | 38° | 40° | 42° | 44° | 46° | 48° |

ABSOLUTE AND MEAN TEMPERATURES.

| | [12] | 1898 | Mean Maximum Temperature | | Mean Minimum Temperature | | Absolute Maximum Temperature | | Absolute Minimum Temperature | | Relative Humidity | DAYS | | | Maximum Temperature Above 90°—Days | Minimum Temperature Below 32°—Days | Thunder Storms | Days with Fog, A.M. and P.M. |
|--------------------|-------|-------|--------------------------|--------|-----------------------------|-------|------------------------------|--------|------------------------------|-------|-------------------|------|--------|-------|------------------------------------|------------------------------------|----------------|------------------------------|
| | | | 8 A.M. | 8 P.M. | Wind—Average Miles Per Hour | Clear | Fair | Cloudy | Rainy | Clear | | Fair | Cloudy | Rainy | | | | |
| Boston..... | 58.0° | 43.5° | 99° | 9° | 76° | 73° | 10.9 | 130 | 91 | 144 | 130 | 9 | 87 | 16 | 12 | | | |
| New York..... | 59.5° | 46.4° | 99° | 5° | 78 | 72 | 12.5 | 109 | 124 | 132 | 150 | 5 | 70 | 30 | 34 | | | |
| Denver..... | 62.6 | 35.5 | 98° | — | 60 | 36 | 7.9 | 150 | 162 | 53 | 86 | 29 | 165 | 46 | 4 | | | |
| Fresno..... | 77.0 | 49.1 | 114 | 24 | 69 | 30 | 5.3 | 262 | 52 | 51 | 31 | 109 | 31 | 0 | 0 | | | |
| Jacksonville..... | 78.6 | 61.0 | 98 | 24 | 86 | 79 | 7.6 | 147 | 167 | 51 | 135 | 68 | 5 | 43 | 4 | | | |
| Los Angeles..... | 74.2 | 51.2 | 99 | 31 | 75 | 61 | 4.3 | 160 | 172 | 33 | 25 | 28 | 1 | 0 | 20 | | | |
| Phoenix..... | 83.6 | 55.8 | 111 | 23 | 48 | 24 | 4.3 | 239 | 71 | 35 | 33 | 153 | 19 | 19 | 3 | | | |
| Red Bluff..... | 74.5 | 50.5 | 112 | 24 | 62 | 33 | 6.2 | 244 | 68 | 54 | 47 | 86 | 19 | 6 | 5 | | | |
| St. Louis..... | 65.2 | 48.9 | 96 | 3 | 80 | 64 | 9.9 | 133 | 106 | 126 | 133 | 34 | 69 | 54 | 12 | | | |
| San Diego..... | 66.6 | 54.5 | 91 | 36 | 77 | 70 | 5.7 | 291 | 26 | 48 | 40 | 1 | 0 | 1 | 28 | | | |
| San Francisco..... | 60.4 | 48.8 | 89 | 36 | 86 | 71 | 10.8 | 152 | 148 | 65 | 50 | 0 | 0 | 0 | 25 | | | |
| Santa Barbara..... | 69.3 | 50.6 | 95 | 34 | 67.5 | 4.1 | 256 | 66 | 53 | 17 | 5 | 0 | 0 | 0 | 5 | | | |
| Pine Crest..... | 71.4 | 53.5 | 101 | 34 | 61.0 | 4.2 | 278 | 41 | 46 | 16 | 23 | 0 | 0 | 0 | 1 | | | |

*Mean of Year.

Average velocity of wind in miles per hour (since observations began).

| [10] | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|--------------------|------|------|------|-------|-----|------|------|------|-------|------|------|------|
| Boston..... | 12 | 13 | 14 | 12 | 10 | 11 | 13 | 12 | 10 | 8 | 7 | 7 |
| San Francisco..... | 7 | 8 | 9 | 10 | 11 | 13 | 13 | 12 | 10 | 8 | 7 | 7 |
| Sacramento..... | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 7 | 6 | 6 | 6 | 7 |
| Santa Barbara..... | 3 | 4 | 5 | 4 | 4 | 5 | 4 | 4 | 4 | 3 | 3 | 4 |
| Pine Crest..... | 5 | 5 | 5 | 6 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 |
| San Diego..... | 5 | 5 | 5 | 6 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 5 |

| [11] | Winter | Spring | Summer | Fall | Relative humidity. |
|-----------------------|--------|--------|--------|------|-------------------------|
| Santa Barbara..... | 67% | 71% | 75% | 71% | Wind, miles per hour. |
| | 3.6 | 4.5 | 4.2 | 3.4 | Relative humidity. |
| Pine Crest..... | 55 | 66 | 61 | 61 | Wind, miles per hour. |
| San Diego..... | 4.5 | 4.4 | 2.6 | 3.7 | Relative humidity. |
| San Diego..... | 74 | 78 | 80 | 78 | Wind, miles per hour. |
| Los Angeles..... | 5.0 | 6.0 | 6.0 | 5.0 | Relative humidity only. |
| Cannes..... | 67 | 73 | 73 | 69 | |
| Cairo..... | 73 | — | — | — | |
| Davos..... | 70 | — | — | — | |
| Algiers..... | 80 | — | — | — | |
| Hawaiian Islands..... | 75 | 72 | 72 | 72 | |
| | 71 | 74 | 69 | 71 | |

[2] (Since observations began)
Mean of absolute minimum temperature.

| | | | |
|--------------------|----|---------------|----|
| Auburn..... | 25 | Nice..... | 31 |
| San Jose..... | 28 | Cannes..... | 31 |
| San Diego..... | 38 | Montreux..... | 15 |
| Santa Barbara..... | 34 | Venice..... | 21 |
| Pine Crest..... | 35 | Naples..... | 29 |

Well Earned Promotion—General Wood's accomplishment in ridding Havana of yellow fever for the first time in centuries, was one of the greatest achievements in public affairs that the world has ever seen. Because it was done by a mere doctor, because it only saved lives by preventing disease, and, further, because General Wood did not assist in the slaughter of a few more Spaniards, the press is inclined to sneer at his advancement. History will say that General Wood accomplished one of the greatest things that has ever been done, in demonstrating to the world that a dread disease can be banished from its favorite climate when modern

| [13] | (Since observation began) | DAYS | | | Maximum Temperature Above 90°—Days | Minimum Temperature Below 32°—Days | Thunder Storms | Days with Fog, A.M. and P.M. |
|--------------------|---------------------------|------------|------|--------|------------------------------------|------------------------------------|----------------|------------------------------|
| | | Clear days | Fair | Cloudy | | | | |
| Sacramento..... | 232 | 80 | 53 | 57 | | | | |
| San Francisco..... | 149 | 137 | 79 | 60 | | | | |
| Los Angeles..... | 165 | 153 | 47 | 39 | | | | |
| San Diego..... | 178 | 116 | 71 | 29 | | | | |
| Santa Barbara..... | 241 | 56 | 68 | 32 | | | | |
| Pine Crest..... | 237 | 77 | 51 | 28 | | | | |

| [4] | FEBRUARY, 1903 | CALIFORNIA | TEMPERATURES | Palmiro | Riverside | Los Angeles | San Diego | Santa Barbara | Pine Crest |
|----------------------------------|----------------|------------|--------------|---------|-----------|-------------|-----------|---------------|------------|
| | | | | Palermo | Riverside | Los Angeles | San Diego | Santa Barbara | Pine Crest |
| Mean Maximum..... | 57.1 | 65.3 | 63.0 | 60.1 | 62.1 | 60.2 | | | |
| Mean Minimum..... | 30.4 | 31.6 | 41.0 | 44.4 | 40.1 | 44.2 | | | |
| Highest Minimum..... | 42.0 | 42.0 | 53.0 | 55.0 | 49.0 | 62.0 | | | |
| Highest Maximum..... | 72.0 | 82.0 | 78.0 | 75.0 | 76.0 | 74.0 | | | |
| No. of days with Minimum between | | | | | | | | | |
| 20—29.9..... | 14 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30—39.9..... | 13 | 15 | 11 | 7 | 11 | 10 | | | |
| 40—49.9..... | 1 | 3 | 15 | 17 | 17 | 10 | | | |
| 50—59.9..... | 0 | 0 | 2 | 4 | 0 | 7 | | | |

[7] (Since observations began)
Mean of absolute maximum temperature.

| | | | |
|--------------------|-----|-----------------------|----|
| Auburn..... | 103 | Montreux..... | 83 |
| San Jose..... | 96 | Paris..... | 92 |
| San Diego..... | 89 | Berlin..... | 91 |
| Santa Barbara..... | 95 | New York..... | 93 |
| Pine Crest..... | 99 | Colorado Springs..... | 93 |
| Nice..... | 88 | | |

sanitary methods are properly and thoroughly applied. It is a sad commentary upon the point of view of our newspaper editors when they utterly ignore a great work of this humane character, and charge up to official favoritism the promotion so well earned by General Wood. It is most unfortunate that the newspapers should encourage the idea that the military man who slays the most of the enemy, or permits the most of his own command to die from preventable disease, is more to be honored than the man who, without any powder, saves the lives of thousands of human beings by preventing the invasion of a fatal disease.—*Cleveland Medical Journal*.

HEADACHE AS A SYMPTOM.*

By H. BERT. ELLIS, M. D., Los Angeles.

Professor of Ophthalmology, College of Medicine, University of Southern California.

THREE is probably no single symptom to which humanity is subject more common than headache, and none which incapacitates one for mental work so completely; and it would indeed be a most interesting symposium, "Headache as a Symptom," presented by the neurologist, the gynecologist, the specialist on the digestive organs and the ophthalmologist.

From such sources, where careful observation had been exercised, a classification of headaches could be made which would be of exceedingly great value to the general practitioner as well as to the specialist. Then the oculist would not think it possible to relieve every headache by the use of lenses or the treatment of the eyes, and the general practitioner would the more frequently refer his headache patients to some fellow physician, but with greater discrimination than is now generally used.

Headache is a symptom occurring in the course of a great variety of diseases. Organic cerebral diseases, congestion and anemia of the brain, functional nervous disorders, toxemic conditions, disturbances in the digestive tract, uterine and ovarian troubles.

The character of the pain varies greatly; it may be superficial or deep, constant or paroxysmal, general or local, dull or heavy, sharp or throbbing.

Prof. J. C. Wilson, of Philadelphia, gives the following classification for the etiological causes of headache:

1. Reflex irritations—a, the eye; b, the nose; c, the teeth; d, the ear; e, the reproductive organs.
2. Toxemia—a, infectious diseases; b, auto intoxication; c, drugs—opium, alcohol, quinine; d, poisons—lead, tobacco, tea, coffee.
3. Disturbances of circulation—a, congestions; b, anemia; c, arterial changes.
4. Neuroses—a, epilepsy; b, hysteria; c, neurasthenia.
5. Organic diseases—a, syphilis; b, meningitis, etc. (1.)

Probably the great majority of headaches have a multiple origin; at the same time it is also most probable that the correction of errors of refraction and the treatment of muscular unbalance, when either exist, will give much relief to a greater number and variety of headaches of not strictly ocular origin than any other single mechanical or medical proceeding; but this fact would not justify one in treating headache from typhoid fever by glasses and, on the other hand, it would be too absurd for any physician to repeatedly give phenacetin, antipyrin, acetamalid, or the "headache tablets" of the trade to relieve head-

aches which are manifestly of ocular origin, and it is of these that I wish to write.

It is altogether probable that ophthalmologists sometimes magnify the effects produced by errors of refraction, but it is certainly true that such refractive defects are responsible for a large proportion of headaches and for other reflex disturbances. Very many neurasthenics who come across the continent in search of health have errors of refraction and frequently these are the largest factors in their breakdowns.

In opening the discussion upon headaches and their treatment at the 67th annual meeting of the British Medical Association, Lauder Brunton (*British Medical Journal*, Nov. 4, 1899) said:

In all cases of headache the first thing to do is to examine the teeth and see if they are decayed; next the eyes and see if there be any abnormality in them. The most common cause of headache is certainly some abnormality in the eyes.

He considers two factors to be active in the production of headache: First, a general condition with disordered or imperfect nutrition; second, a local condition. The former condition renders the person liable to pain, the latter determines the location of the pain, and this determining factor is most often decayed teeth or defective eyes. (2.)

Pain in back of neck, described as pulling, drawing, or a tense feeling radiating down the back and to the shoulder, and frequently more prominent on one side than the other, is present in about 80% of all cases of refractive errors. It is almost pathognomonic of eye-strain, and it rarely fails to disappear with the correction of the visual error. (3.) Personally, I have found this symptom a continuation downward of the occipital headaches and nearly always preceded or accompanied by a frontal or temporal headache.

I believe that the eye is a factorial element in fully 60% of all headaches, and that it is the chief factor in about 80% of all headaches of the fronto-temporal variety. How do we recognize eye headaches? There are several factors to be taken into consideration: First, the occupation of the individual; second, the time of day or night when the headache makes its appearance; third, the location of the discomfort; and, fourth, the character of the pain. In reference to the locality, the order of frequency of ocular headaches appears to be, first, frontal; second, deep orbital; third, temporal; fourth, occipital; fifth, sick headaches. The occipital seldom appears by itself when a manifestation of eye-strain. Headaches of ocular origin are more frequently dull and heavy, rather than very sharp and, when not due to a diseased condition, are found in those people who make considerable use of the muscles of accommodation and convergence.

* Read at the Thirty-third Annual Meeting of the State Society, Santa Barbara, April 21-23, 1903.

When you find a patient complaining of headaches after riding on the cars, after going to a place of amusement such as the theatre or opera, or even church, or after shopping, you will be tolerably safe in suspecting the eyes, and in sending such an one to an oculist.

When headaches occur as a result of eye defects, they nearly always make their appearance within a few hours after the eyes have been taxed, but sometimes they are postponed until the next day, especially when the eyes have been used to a considerable extent at night.

The headache which most resembles ocular headache is that arising from intranasal irritation or disease such as hyperemia or pyemia of the frontal or maxillary sinuses; but with these diseases, however, there is usually more or less nasal discharge which would lead one to be suspicious of the origin, while with ocular headaches one is very likely to find more or less itching, smarting and burning of the lids, with angular irritation of the conjunctiva, photophobia and *muscae-volitantes*.

In patients subject to sick headaches, it is always wise to look for eye symptoms, for when found (and they are in about 60% of those afflicted) the correction of the defects leads to an amelioration and frequently a cure.

There are some headaches which are so infrequently the result of eye errors that they should never be sent to the oculist until all other means for their relief have been tried without benefit. The neurotic or nervous headache may or may not be accompanied by refractive errors, but when it is the correction seldom gives permanent relief.

Headaches which occur in the night time are certainly not of ocular origin, and one may feel justified in diagnosing some extra-ocular cause, even where other eye symptoms be present, especially when it is not possible to use the eyes without discomfort, if the headache in question wakes the patient up after he has retired and the lights have been extinguished. (4.)

Small errors of astigmatism are the most common causes of ocular headaches, hyperopia and even myopia are not uncommon elements in these most uncomfortable symptoms, and heterophoria may at times be the only element in their production.

Mr. W. A. Brailly (Guy's Hospital) read a paper on "Ocular Headaches," in which he said it is a general law that the greater the error of refraction the less the effect on the head, because a great defect leads to abandonment of the effort of accommodation, the patient seeing as best he can without it. Uncorrected presbyopia is a rare cause of headache, except just at its commencement. It might cause strain and burning but not headache. Similarly great inequality of

refraction gives comparatively little trouble, the worse eye being unused. (5.)

The mechanism of extra-cranial headaches is not particularly difficult to explain, but the modification of function as manifested in intracranial pains, with which this paper deals, has always puzzled pathologists and, in fact, has not yet been satisfactorily described.

Why do we have headache as the result of eye-strain? Lucien Howe presents an explanation of how eye-strain causes headache—by the term "eye-strain" he means the pain experienced by some persons when reading, sewing or doing other near work. This pain may be referred to the eye itself, the forehead, or some part of the head, or possibly even to the shoulders. The proposition which he seeks to prove is that these pains are due directly to some muscular contraction.

According to the theory of Helmholtz, the ligament of Zinn is tense when the eye is at rest and relaxes more and more in proportion to the degree of accommodation. A better explanation has been offered recently by Professor Tscherning. This observer contends that the act of accommodation is not altogether passive, as Helmholtz believed, and that on looking at a near point the ciliary muscle is contracted. This draws the edges of the lens, bends the central portion of the anterior surface further forward, and makes the lens more convex. On this theory, that near vision is entirely an active muscular effort, it is not difficult to explain the pain in the eyes which sometimes constitutes the first feature of ocular headaches. Moreover, a certain amount of accommodation always means a certain degree of convergence of the visual axes which implies tension of the internal recti, and also, to a certain extent, of the superior and inferior recti.

The accessory muscles of the forehead and head are called into action when any special effort is required to maintain accommodation, and it is the tension of these accessory muscles which gives rise to the headache. The occipito-frontalis is an important muscle in this respect, and both the anterior and posterior portions are subjected to strain in connection with a special effort to maintain accommodation. This explains the frontal and occipital headaches. (6.)

Casey Wood, referring to supra-orbital headaches due to ciliary strain, traces the reflex arc back to the ocular motor nucleus and adjacent trigeminus nucleus from which it is reflected to the terminations of the fifth nerve. (7.)

Headache is common in cases of nerve exhaustion proceeding from almost any cause, and particularly from prolonged mental effort or worry. It may be a result of anemia, and is then

commonly frontal; or may be due to congestive states of the brain resulting from heart disease, asthma and other forms of dyspnea. In these latter cases it is throbbing in character, and as in nearly every other variety of headache is increased by stooping, coughing or any other condition which tends to increase the congestion.

Toxic headaches are frontal and deep seated, and sometimes very severe. Secondary syphilitic headache is neuralgic and limited to the temples.

Headaches resulting from stomachic or hepatic derangements are usually occipital or vertical, but may be frontal or general. In neurasthenic patients the general conditions are such that headaches may result from errors of refraction which in health would have caused no trouble. Such a headache, once established, may in itself further disturb the nervous equilibrium of the patient. In this class of cases the good effects of properly adjusted glasses, by relieving the patient of a disagreeable symptom, may be very great. This "ocular headache" must not be confused with the "neurasthenic headache," which is possibly toxic in origin and continues after every source of peripheral irritation has been removed. Neurasthenic headache is very intractable to treatment by drugs, and a suitable climatic condition is of much value in bringing about a cure. In tuberculous patients ocular headaches may have a bad influence upon the general condition. The pain and discomfort bring about a depressed mental condition and there follows loss of appetite and indisposition to go out of doors, with resulting bad effect upon the general health. A routine examination of the eyes of all neurasthenic patients is to be recommended, and in cases of chronic disease where ocular defects may be the cause of headache and other disturbances which have an unfavorable influence, the possibility of learning something by the examination of the eyes which may be of value, should not be forgotten. (2.)

Dr. F. Windscheid, of Leipsic, in an article on headaches, states that in no ailment must the causal indication be so closely adhered to as in headache.

As Dr. Collins states, the treatment of headache accompanying the infectious diseases can best be remedied by combatting the cause. The treatment of those arising from drugs consists in the discontinuance of those preparations taken therapeutically—mineral or vegetable—proper care when required by occupation to come in contact with the metals, such as lead, mercury, etc., and the promotion of the elimination of any poison which may be in the system. But, aside from these cases where the treatment is etiological, there are a variety of idiopathic forms which require special treatment. (8.)

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COMMUNICATION.

Some Further Remarks on Dr. Sherman's Paper Published in August Journal.

To the California State Journal of Medicine:—In your last issue, I see that Dr. Tait's discussion of Dr. Sherman's paper, "An Unusual Infection Causing Acute Suppurative Appendicitis," was published, whereas my discussion of the same was not. I should like it, therefore, if you would publish my remarks, as perhaps answering some of Dr. Tait's contentions.

Dr. Tait's idea that the specimens were exposed to the air for an hour before taking the cultures, is certainly erroneous. The appendix, and later the gauze drain, were brought to our laboratory wrapped in many layers of sterile gauze and surrounded with gutta percha tissue. Cultures were made immediately. Fifty colonies of Friedlander's bacillus developed in the first culture tube. Certainly if we should suspect contamination, it is rather remarkable that we should not have had a bacterium more ordinarily found from contamination. Also, it is still more remarkable that the second culture made from the same case should also have shown 40 colonies of Friedlander's bacillus.

That Dr. Sherman's conclusions should have been "most probably entirely negative," I think is contradicted pretty strongly by the fact that the patient's blood gave an agglutination reaction with the bacillus of Friedlander in dilution, of one to forty. This is certainly good evidence that the patient was suffering from an infection with Friedlander's bacillus.

I think that more attention has been given to the anaerobic bacteria than Dr. Tait realizes; and I also think that the reason that this work has not been reported, is because of the negative results obtained.

It is true that Dr. Veillon has found a number of anaerobic bacteria in such lesions as otitis media, appendicitis, etc., but it remains for him to prove conclusively that these organisms are pathogenic, and that they cause these lesions; and are not simply there as contamination, so to speak, since the sites from which these bacteria have been isolated are, almost all, parts of the body in direct communication with the external air. It also remains for other observers to confirm his work.

As far as the bearing of Dr. Veillon's work on Dr. Sherman's case is concerned, Dr. Veillon has found his anaerobic bacteria in the gangrenous cases, and Dr. Sherman's case certainly does not belong to that group.

Of the few anaerobic bacteria whose pathogenicity has been established, I do not think there is any reasonable evidence that any of them may have been factors in the case.

In conclusion, I should like to say that the methods pursued in this case are those pursued in the vast majority of similar cases, both here and abroad, and it remains for some one to prove that other methods are necessary before such methods will be adopted.

MARY HALTON.

REPORTS OF MEDICAL SOCIETY MEETINGS.

Humboldt County.

The regular meeting of the Humboldt County Medical Society was held in Eureka, Tuesday evening, July 14, Dr. Felt presiding.

The committee appointed to draft a fee bill brought in a partial report and were given time in which to complete their work.

Dr. G. N. Drysdale reported a case of amputation at the hip joint by Wyette's method, for tubercular osteomyelitis. The disease, beginning at the knee, had extended up to the head of the femur; acetabulum was not involved; recovery was uneventful and patient was out on crutches in four weeks; wound completely healed.

Dr. McKibon reported a case of puerperal septicemia occurring eleven days after labor.

Dr. J. J. Gaynor read a paper on "The Use of Ergot During Labor." He said that ergot had practically no place in the management of a case of labor. In the first stage he never used it; in the second stage he never used it, with the single exception of the birth of the second child in twin births. He considered the third stage better completed without ergot. Its use was liable to retard or prevent the natural delivery of the placenta and render manual extraction necessary. His custom was to use an aseptic preparation of ergot hypodermatically, after the completion of the third stage, not so much as a prophylactic against hemorrhage, but because it lessened after-pains.

Dr. H. G. Gross read a paper on "The Management of Compound Fractures." He said that the lumbering industry in this county gave us an unusual number of these injuries. The shingle saws, cogwheels and cable spools were responsible for most of the compound fractures of the fingers and hands. He believed in the conservative treatment of these injuries. Where a man would rather lose a finger than lose time, and made the choice himself, it was well enough to amputate; but amputation was seldom necessary when there was not complete death of the part. He used sutures when needed, being careful not to close the wound too tightly; splints when necessary, and a moist dressing when there was contusion, giving the patient some mild antiseptic solution with which to keep the dressing moist. In fractures of the toes, rest was the most important part of the treatment. Fractures of the bones of the leg were common and hard to handle. He did not believe in wiring if he could avoid it. In the majority of cases, free incision, thorough cleansing, removal of loose fragments, bringing the broken ends in apposition, a heavy dressing, completed with plaster of paris, gave the best results. Cellulitis called for energetic treatment, with free incisions, but he did not give up the idea of union unless amputation was necessary to save life. Compound fractures of the thigh were apt to be severe and hard to manage. Posterior splints, slight traction, and if suppuration occurred, perfect drainage would do the work for the majority of cases. He cited a case occurring in his practice in which there was extensive laceration of the thigh, a mass six inches long and extending around three-fifths of the circumference of the thigh sloughed out. The anterior crural nerves lay on the bed of the cavity; the femoral artery hung like a cable, unsupported for six inches; the ends of the bone were exposed at the bottom of the cavity, and the leg hung by the fascia lata. The man had a hard struggle, but to-day had a leg, stiff at the knee, but a good deal

better than a wooden one. It took nearly five years to get this result, but it taught him what conservative surgery would accomplish. Compound fractures of the arm called for much the same treatment as those of the leg, except that in the upper arm he found the ideal place for wiring. He considered that in no class of cases were the results of modern surgery more brilliant than in compound fractures.

Discussion of the papers was taken part in by Drs. Felt, Wallace, McLaren, Gross, Loofbourrow, Perrott, Sinclair, McKibon, Gaynor and Drysdale.

The regular meeting of Humboldt County Medical Society was held at Eureka, Tuesday evening, August 11, Dr. R. Felt presiding. At the July meeting it was resolved to hold meetings of the society in towns outside of Eureka twice a year, and in accordance with this resolution it was decided to hold the September meeting in Ferndale.

Interesting clinical cases were reported by Drs. Wallace, H. G. Gross, Gaynor and Drysdale. An interesting case was reported by Dr. Felt, of a woman who called to see him, saying she was pregnant about three months and thought she would miscarry, having had pains for several days and considerable flowing. On examination it was found that abortion was inevitable, and on attempting to dilate the cervix several hemorrhages followed. The vagina was packed temporarily and further investigation revealed a rent in the posterior lip of cervix, at vaginal junction, large enough to admit three fingers. Later inquiry elicited the fact that the woman had tried to produce an abortion herself, using a bougie, and instead of introducing it into the os, had punctured the posterior lip of cervix. Infection followed, with sloughing, and the hemorrhage was due to sloughing of circular artery. The uterus was emptied, and recovery followed.

Paper was read by Dr. E. J. Hill, county health officer, on "Preventive Medicine," dealing particularly with the smallpox epidemic in this county. He saw the recent outbreak of smallpox amongst the Indians here, and demonstrated the value of vaccination as a preventive measure. The cases amongst the Indians who had not been vaccinated at all, being of a much more severe form. He spoke also of the prejudice that exists among the people here against vaccination, and the danger that may arise from it.

In the discussion which followed, many instances were cited of cases in which the value of vaccination was clearly demonstrated.

G. N. DRYSDALE, Secretary.

San Diego County.

At the regular meeting of the San Diego County Medical Society, August 7, President Fred Baker in the chair, the membership committee reported favorably on the application of Dr. J. M. Steade to become a member, and he was duly elected.

Dr. Magee read a paper on "Puerperal Infection," based on a recent case of puerperal pyemia. He prefaced his report by stating that in the present day of antisepsis, cases of puerperal infection were considered due to some neglect on the part of the attendants in carrying out those regulations as to cleanliness, known and practised by all careful surgeons, and affirmed that under the most exact methods of antisepsis an occasional case of infection would arise. Also the converse of this was true; that many cases with the most unsanitary surroundings,

with no regard, whatever, for asepsis, passed an uneventful puerperium.

The doctor spoke of the three phases of infection, sapremia, septicemia and pyemia, giving their differential diagnostic phases. He then reported a case from his own practice, of a primapara with tedious labor and instrumental delivery in which the patient did well until the seventh day, when she was suddenly seized with a violent chill, followed by a rapid rise in temperature to 104.05° F., succeeded by drenching perspiration and temperature sinking to subnormal, with recurring paroxysms of the same character at irregular intervals. After the second chill the doctor gave 10 cc. antistreptococcus serum every six hours until 40 cc. had been administered, the result being an arrest of the paroxysms, and a continuous improvement and a complete recovery.

Drs. Burnham, Doig, Gochenaur and others discussed the paper, dwelling particularly upon the apparent good results from the use of the serum in the case.

THOS. L. MAGEE, Secretary.

San Francisco County.

The regular monthly meeting of the San Francisco County Medical Society met in the parlors of the Y. M. C. A. on Tuesday evening, August 11, President Kengla presiding.

Dr. A. B. Grosse read a paper on the "Treatment of Lupus Erythematosus and Report of Case" (to be published in the JOURNAL).

The reading of a paper, "An Interesting Case of Brain Surgery," by Dr. George Goodfellow, was postponed on account of the author's absence from the city.

Dr. R. D. Cohn read his paper on "Acute Radiating Parenchymatous Keratitis—Demonstration of Case," which he had prepared and read before the State Society at its April meeting at Santa Barbara.

The committee appointed to prepare a memorial minute on the death of Dr. Matthew Gardner, reported the following:

"San Francisco, August 11, 1903.

"To San Francisco County Medical Society—Your committee on memoriam to the late Dr. Matthew Gardner respectfully reports as follows:

"With bowed heads and sad hearts, we deplore his sudden and untimely demise.

"Though the inception of his professional career was as an obscure and comparatively unknown rural physician, he soon rose to eminence and distinction, and even before he had attained the full bloom of middle age he became the chief surgeon of the Hospital Association of the Southern Pacific Company.

"The responsibilities of such a position require tact, energy, medical ability and surgical skill, together with executive capacity. Nature seemed to have endowed Dr. Gardner with all these qualities.

"When we see a person ambitious, industrious, able, frank, firm, self-reliant and confident, we cannot refrain from admiring him; but there was one phase of Dr. Gardner's character that particularly commends him to the warmest esteem, and that was his indulgent consideration for, and kindly forbearance with, and toward young members of his profession. When meeting an older man who has gained professional character and distinction, the youthful medico is, perchance, timid and awed, and frequently loses that nerve so necessary to success; but with Dr. Gardner he was immediately made to feel at ease.

"He had ever present before him his own early struggles. Experience had taught him that with youth the world is skeptical of ability, and with those ideas uppermost in mind, he never failed to

encourage and reassure the young man, and always consulted and advised with and deferred to his opinion and judgment, with as much alacrity and consideration as he would with older and presumably more learned doctors.

"Viewed as a whole, his life and career can be exemplified in the words, 'Well done, thou good and faithful servant.'

"When we are called to answer the last summons which shall bid us take our place in the silent halls of eternity, let us hope that when the reckoning shall be made, we will be found, like him, in the ranks of faithful service, and then, as may be said of him, so will it be said of us, that our lives were good; that in our departing moments we may be sustained and soothed by a consciousness that in passing unto death we have fulfilled our allotted portion and duty in life.

"W. B. COFFEY, Chairman."

Amendment proposed at the last meeting, to the Constitution and By-Laws, permitting residents of adjoining counties in which there are no county societies, to apply for membership in this society, was adopted.

An invitation was received from the University of California, to the members to attend the dedicatory exercises on Thursday, August 20, of the new physiological laboratory.

San Francisco Society of Eye, Ear, Nose and Throat Surgeons.

The monthly meeting of the San Francisco Society of Eye, Ear, Nose and Throat Surgeons was held on April 16th, 1903, President Deane in the chair.

Dr. Cohn—"Tuberculosis of the Larynx." Family history gave no tuberculosis. Two months ago the trouble began with hoarseness. There is now a circumscribed ulceration of the right cord. I have shown this as a typical case in which we have the hope of curing the patient. Shall use a 50 or 60 per cent solution of lactic acid after curetting.

Dr. Payne—I have had but two cases of tuberculosis of the larynx in which I have used it. Neither was primary. In one case I curetted thoroughly and used 25 per cent lactic acid. The reaction was very severe and general condition grew worse. In the second one I followed the same plan, using 50 per cent lactic acid solution, with temporary benefit. I do not feel encouraged to repeat this treatment and do not think I will resort to it again, especially where the process is not primary.

Dr. Deane—I appreciate what has been said in regard to curetttement and the use of lactic acid, but I wish to mention also the use of creosote. I look back on my most successful cases and they are those on whom I have used creosote internally, beginning with small doses and run up to 8 to 18 drops three times a day; also locally by inhalation of creosote vapor heated to about 300° F.

Dr. Cohn—As I implied before, there are three stages of tuberculosis of the larynx. The first is the early stage where the curetttement and lactic acid may be successful, and before the ulcers have become diffuse. Orthoform is of value in the second stage when you cannot hope to cure your patient. All you can do is keep the ulcers clean and secondary infection away. In the third stage the patient will have to have the throat cocained or morphined. I think that we should always try to affect a radical cure, and the only time for a radical cure is in the beginning. If the ulcer has formed the curette should be used thoroughly, and then rub with lactic acid, using a 50 to 80 per cent solution.

Dr. Merritt showed a case of subacetate of lead deposited in the cornea of both eyes. About five years ago the patient was given a solution of subacetate of lead to drop in his eyes, as they were sore. The result of the treatment was a permanent deposit in the cornea of both eyes, which has remained ever since. The epithelium lies over it, leaving the surface smooth.

Dr. Martin—If it is a deposit of lead there are means of getting it out, but if it is an old infiltration it cannot be removed.

Dr. Franklin presented some-new instruments for inspection. (1), a binocular electric head mirror (Clares) which can be readily focused; (2), Hajek's chisels for the septum; (3), Schulmeister's electric saw handles and saws; (4), a sliding scissors for removal of the turbinates.

The President—The subject for this evening's discussion is the evisceration of the globe. The subject can be divided into four divisions: First, the indications for the operation; second, the operative technique, and in this there is always something new as, for instance, whether the eye is simply left with a clot of blood in its interior, or the advantages of inserting a foreign substance, as a gold, silver, silver wire, or glass globe, sponge or paraffin; the method of keeping the scleral wound gapping, etc.; third, the after treatment, and much has been said as to the severe reaction following evisceration; fourth, the final results. Is the foreign substance retained? Is the eye painful? The chances of sympathetic ophthalmia, the cosmetic effects, etc.? None of us has had experience in all these lines, and that is why I bring up the subject, so that all may profit by the experience of others. I believe it to be the operation of the future in selected cases.

Dr. Payne—As regards the indications for the Mule's operation, I can speak from experience of ten or twelve cases, in which I have been very much pleased with the result. Of course it is simply the amputation of the anterior segment of the eye at the limbus, evisceration of the sclera, and the insertion of the glass ball. It is indicated wherever there is no infection or malignant disease within the globe, and may be used in recent penetration injuries where enucleation is done to prevent sympathetic trouble. In old cases, however, I will not resort to it, but up to this time I have used no other material than the vitrified glass ball for insertion into the sclera. The selection of the size of the ball is important. It should fit into the scleral cavity without any tension and still fill the cavity. Slitting the sclera a little at the interior and exterior canthus will allow one to coaptate the edges of the wound the better. As a rule, there is a great reaction after the operation. The lids swell, conjunctiva very edematous, and there is considerable pain for several days. Ice applied does not seem to prevent this. I used it in my first two cases, and although they came out favorably, of course, it was after a great deal of trouble and pain. To prevent this I now make a wall of cotton over the orbit, filling it in over the lids, so as to make a snug compress over the whole orbital opening, and then put on a snug flannel bandage. The more evenly this pressure is adjusted, the less the reaction, pain and swelling. Occasionally the patient requires a hypo of one-eighth or one-quarter of morphin the first few hours after the operation, but further than this I have had no trouble and the results have been excellent.

Dr. Deane—Dr. Payne's remarks have certainly been interesting and instructive. Would like to ask Dr. Payne if he has had any experience with the injection of paraffin. Could you bring some of your cases to one of our meetings?

Dr. Payne—In answer to the question as to the use of paraffin, I have had no experience with it, but I can understand how it might be very satisfactory to fill in the orbital cavity or the space behind the conjunctiva in an ordinary enucleation. The glass ball has been so satisfactory with me that I hesitate to use any other material; however, I may try the paraffin to fill up the sclera in the near future.

Santa Clara County.

A stated meeting of the Santa Clara County Medical Society was held on Wednesday, 19th inst.

The principal business was the consideration of the report of the committee appointed at the July meeting to investigate the causes leading to the recent suit to have that portion of the medical law relating to election of members of State Board of Medical Examiners by the three State Societies, declared unconstitutional. The report is based on sworn evidence submitted to the committee, and was discussed at length. The action of the instigators of the suit met with unanimous and unqualified condemnation.

Relative to the subject, the following resolution was unanimously adopted:

"Resolved, That this Society concurs in the report of its committee, and that a copy thereof be sent to the CALIFORNIA STATE JOURNAL OF MEDICINE for publication, as a public expression of the sentiment of the Society in this matter."

San Jose, Cal., August 19, 1903.

To the President and Members of the Santa Clara County Medical Society—After a careful investigation of those matters submitted to it, relative to the suit begun to oust the Board of Medical Examiners of the State of California, your Committee appointed at the July meeting to inquire into the causes leading to this action, if any there be, beg leave to report its findings as follows:

First. The original medical law of California was approved by the Governor and went into effect April 3d, 1876. It remained in force twenty-five years, or until the present law became effective, August 1st, 1901. The original law provided for the election of three State Boards of Medical Examiners by the three State Medical Societies, to wit: Regular, Homeopathic and Eclectic. The functions and duties of these boards were both judicial and ministerial. Judicial, as having power to inquire into the knowledge and capability possessed by non-graduates who might apply for license to practice; ministerial, in being compelled by the law to accept and indorse diplomas from applicants for license, no matter whether obtained in due course of study, or otherwise, so long as the college granting the diploma was listed by its representative State Board. The new law consolidated the three State Boards into one, composed of representatives from the Regular, Homeopathic and Eclectic State Medical Societies, and made an examination by the State Board compulsory for all graduates applying for license.

Second. The medical profession of the United States had for a long time demanded a higher standard of medical education. The countries of Europe refused to give the same standing to graduates of American colleges and universities that they did to those of their own. In fact, graduates from American medical institutions were prohibited from practicing their profession in Europe without first taking specified courses in its schools, while alien product was freely admitted to our shores. This condition of affairs, in a great measure, was due to the multiplicity of medical colleges in the United States, some of which were of the highest standard, many of mediocrity, while still others of the lowest; yet all chartered under the laws of the several states, with authority to confer the degree of "Doctor of Medicine," and issue diplomas therefor. California, with commendable pride, desiring to be with the advance in college requirements and education, took measures to remedy the defects in the old law which had retarded, if not absolutely prevented, any uplifting of professional standard in its own state. As a result, the present law was enacted, and the illiterate and unlearned cease to have a right to practice medicine by reason of holding a diploma; a certificate from the State Board of Medical Examiners being required, to enter upon the practice of medicine and surgery.

Third. The present law was passed by the Legislature of 1901, and went into effect without the then Governor's approval. It received the support of every ethical member of the profession and the three State Medical Societies. Notwithstanding this, certain parties who had con-

stituted themselves proprietors and trustees of a medical college in San Francisco, sought its defeat by personal attendance upon the Legislature during its consideration of the bill, fearing the disastrous consequences to their college by loss of students on account of the knowledge and skill required of the latter under the new law. The political influence of the president of that college with the Governor induced that executive to withhold his approval of the bill. The results dreaded by these opponents were afterward realized in the rejection, by the State Board, of seventy-four per cent of the graduates of that college who appeared for examination and were found to be incompetent. Chagrined at the failure of its graduates, the proprietors and trustees of that college, instead of improving its methods of instruction, correcting its irregularities, enforcing discipline and compelling study, endeavored to secure a repeal of that portion of the law which gave to the State Medical Societies the power to elect the members composing the State Board of Medical Examiners. For this purpose they secured the introduction of that infamous measure known as "Assembly Bill No. 129." Failing in this, several other bills were introduced as trailers, in hopes of securing the passage of one or another, whereby State examinations would be abolished, in whole or in part, and that the members of the State Board of Medical Examiners would be appointed by the Governor. It was expected that through the influence of the politicians in the Board of Trustees of the college referred to, and their political allies, some future Governor might be induced to appoint one or more members of the State Board whose pliability in the commercial interests of the college could be depended upon. Being again foiled in its schemes to dishonor the medical profession of California, the Board of Trustees of that college, through its representative at the State Medical Society convention, held in Santa Barbara in April last, attempted by bully and bluster to compel the Society to discredit and repudiate its Board of Medical Examiners. It is well known how this effort to outrage decency met with withering rebuke in that convention.

Fourth. It also appears that Dr. Winslow Anderson, now President of the College of Physicians and Surgeons of San Francisco, was a member of the State Board of Medical Examiners for the term of 1889-90. He was elected to that position in precisely the same manner as were the members of the present board, the legality of which is now assailed by his college. It is only after the failure of so many of his graduates in State examinations that it has been left to the acumen of his associate, the Dean, to discover that examining boards so elected have no legal existence.

Fifth. The suit now in court to oust the Board of Medical Examiners, is the expiring effort of the College of Physicians and Surgeons as now conducted. It seeks to destroy every safeguard which the people have a right to demand under medical legislation. Its first and only consideration is the selfish one of financial gain. While the plaintiff in the action is Dr. D. A. Hodgehead, the fact that he is Dean of the college of which Dr. Winslow Anderson is president, has its own significance.

Sixth. These investigations have led your Committee to inquire into the conditions surrounding the College of Physicians and Surgeons of San Francisco. From evidence submitted, it appears that this institution was organized in the year 1896, as a purely medical college. Since that time it has been transformed into an omnibus concern, so that its graduates can receive almost anything from a medical diploma to a certificate in embalming a corpse. It is incorporated under an act relating to "colleges and seminaries of learning." It is the general opinion of those familiar with this statute that it is extremely vicious, inasmuch as it delegates arbitrary powers and permits abuses which the people of this State never intended should be possessed by any corporation. It provides that there shall not be more than fifteen trustees, nor less than five. The college, for reasons of its own, is contented with the lesser number. Under its charter the trustees re-elect themselves from year to year, perpetuating and constituting themselves sole owners and proprietors, while posing before the public simply as trustees. Neither the faculty, alumni, nor any other person, not even the Governor himself, nor any other officer of the State, can have any voice in the selection of trustees, nor a legal right to inquire into its conduct.

When first organized, and for three years thereafter, the college was controlled by its faculty, and the Board of Trustees were the executive branch. During this time its affairs were conducted in a creditable manner, and its students honestly instructed. In knowledge and practice they compared favorably with those of similar institutions. In fact, some of them have received high honors. But over this came a change. Preliminary education of matriculants was disregarded, the college increased in number of students and revenue. Prospective income, together with the notoriety of having a larger student body, was too tempting to be resisted. The trustees proposed to hold night classes, so that a large

number of dentists and veterinaries could attend and receive the degree of "Doctor of Medicine." To their credit, this was promptly vetoed by the faculty, some of whom afterward suffered for their temerity in opposing such a scheme to add to the coffers of the college. Some time after this, notices were sent out soliciting undertakers and others to take a course in embalming. Students were excused from attendance and work, one being given credit for full ninety days spent in the Legislature, a part of which time he was lobbying against the passage of the present medical law. He was graduated in regular course with the other members of his class. A Japanese was graduated in 1900 who could not speak, read or write English, his final examination being conducted through the medium of an interpreter. Members of the faculty protested in open meeting against admission to advanced standing of students from other colleges without examination by them in the subjects of their respective chairs, but were overruled by the trustees, the Dean telling the professors that if they did "not like it they could get out of the college." Fearing the faculty might reject students whom the trustees desired to graduate, the professors and teachers were directed by a written and arbitrary order of the Board of Trustees, of date of May 20th, 1901, to turn over to it all examination papers as soon as completed, with the professor's markings thereon for "its final inspection and action." This practice still continues in that college. It should here be stated that this Board of Trustees consists of five members, three doctors of medicine and two dentists, who thus pass upon the qualifications of all students without regard to their standing with their professors and teachers.

Faculty meetings were abolished by the Board of Trustees in July, 1901, since which time no meeting of professors and teachers has been permitted to be held, nor have they been allowed any voice in passing on rejecting candidates for graduation. Professors who have been identified with the organization of the college, objected to this abolishment of their right, privileges, and to other flagrant abuses of power by the Board of Trustees. For their remonstrance all had their interests, labors, and sacrifices confiscated to the "College," and some were turned out of doors. Others, not wishing to be participants in the dishonorable practice of the new governing body, have resigned from the school, so that there is not one member of the original faculty of over fifty professors and instructors remaining in that college, except the three doctors and two dentists who compose its "Trustees."

Your Committee, therefore, find that the general reputation of the College of Physicians and Surgeons, as now conducted, is extremely savory in all its departments. There seems to be no law of the State to prevent the evils and abuses enumerated.

Under its charter its Board of Trustees can legally confer the degrees of M. D., D. D. S. and Ph. G. on any person, without regard to competency, skill or attendance. It is amenable to no law for doing so. It knows it and profits by it.

Reviewing this statement, your Committee would ask: "Is it any surprise that graduates of that college failed in far greater proportion than others, in their examination by the State Medical Board?" Is it not a greater surprise that any of its graduates succeeded in passing? Evidence shows the State examinations to be impartial and honest. Every examination paper is on file and open to inspection. The personality of candidates, and schools from which they came, being unknown to the examiners, bias or prejudice was impossible. Students from other institutions answered questions correctly to which exceptions were taken by rejected candidates, backed by the President and Dean of the College of Physicians and Surgeons. Hence the query arises, why have not its students received up-to-date instruction?

From the foregoing, it is not difficult to discover and comprehend the animus of the plaintiff in his action in court to oust the Board of Medical Examiners.

In their desperation, he and his associates have endeavored to falsify the etiology and diagnosis of the disease, by a resort to civil courts, rather than to work a cure of the malady by fumigation of their own household.

F. H. PATERSON,
J. F. BURNS,
LINCOLN COTHRAN,
Committee.

On the evening of Sunday, August 2, the wife of Dr. P. M. Lusson died suddenly, having been a sufferer for a number of years from organic heart trouble. The severe earthquake shock on that date so startled her that the effect proved fatal. Mrs. Lusson held a prominent position in San Jose, where Dr. Lusson is one of the most eminent physicians.

and an honored member of the county medical society.

Mrs. Lusson came from a fine Southern family, was a member of the Daughters of the American Revolution and other patriotic orders. She was active in church and all charitable work, a member of the Ladies' Needlework Guild of America, and other societies.

J. LAMBERT ASAY,
Secretary.

STATE BOARD OF MEDICAL EXAMINERS.

July and August Examinations.

In July the State Board of Medical Examiners held an examination in San Francisco and Los Angeles, simultaneously; in August an examination by the Board was held in San Francisco. The following table gives a summary of these examinations: "F" indicates that the candidate failed; "C" that he was conditioned in some one or more subjects, though generally the condition was in pathology; where nothing is indicated, the candidate has passed. A more careful analysis of the data here given will be published at some future date.

San Francisco, July 7th, 8th, and 9th.

| College. | Date Graduation. | Percent- age. | |
|---|------------------|------------------|-------|
| Cooper Medical College..... | 1903 | 85% | ..... |
| " " " | 1903 | 86% | ..... |
| " " " | 1903 | 84 | ..... |
| " " " | 1903 | 81 | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1902 | 84% | ..... |
| " " " | 1902 | 91% | ..... |
| " " " | 1903 | 80% | ..... |
| " " " | 1903 | 81% | ..... |
| " " " | 1903 | 82% | ..... |
| " " " | 1903 | 80% | ..... |
| " " " | 1902 | 82% | ..... |
| " " " | 1903 | 77% | ..... |
| " " " | 1903 | 84% | ..... |
| " " " | 1903 | 86% | ..... |
| " " " | 1903 | 85% | ..... |
| " " " | 1903 | 85% | ..... |
| College of Physicians and Surgeons..... | 1902 | 78% | ..... |
| " " " | 1902 | 76% | C. |
| " " " | 1902 | 84% | ..... |
| " " " | 1902 | 82% | ..... |
| " " " | 1902 | 70% | F. |
| " " " | 1903 | 83% | ..... |
| " " " | 1902 | 84% | ..... |
| University of California..... | 1902 | 78% | ..... |
| " " " | 1903 | 84% | ..... |
| " " " | 1903 | 83% | ..... |
| " " " | 1903 | 81% | ..... |
| " " " | 1902 | 84% | ..... |

Los Angeles, July 7th, 8th, and 9th.

| College. | Date Graduation. | Percent- age. | |
|-----------------------------------|------------------|------------------|-------|
| University of Southern California | 1903 | 88% | ..... |
| " " " | 1903 | 80% | ..... |
| " " " | 1903 | 84% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 89% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 75% | ..... |
| " " " | 1903 | 81% | ..... |
| " " " | 1903 | 82% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 84% | ..... |
| " " " | 1903 | 78% | ..... |

Los Angeles, July 7th, 8th, and 9th.

| College. | Date Graduation. | Percent- age. | |
|-----------------------------------|------------------|------------------|-------|
| University of Southern California | 1903 | 83% | ..... |
| " " " | 1903 | 84% | ..... |
| " " " | 1903 | 79% | ..... |
| " " " | 1903 | 88 | ..... |

MISCELLANEOUS.

(San Francisco)

| | | | |
|------------------------------------|------|-----|-------|
| University Basle, Switzerland..... | 1902 | 73% | F. |
| California Medical College..... | 1903 | 80% | C. |
| Rush Medical College, Chicago..... | 1881 | 71% | F. |
| California Medical College..... | 1903 | 74 | F. |
| Loral University, Quebec..... | 1901 | 69% | F. |
| Apothecaries Hall, Ireland..... | 1899 | 75% | C. |
| Johns Hopkins University, Md..... | 1903 | 94% | ..... |
| University of Minnesota..... | 1902 | 80% | ..... |
| Tufts College, Massachusetts..... | 1901 | 71% | F. |

(Los Angeles)

| | | | |
|---------------------------------------|------|-------|-------|
| University of Illinois..... | 1901 | 73% | F. |
| Harvard University, Massachusetts | 1901 | 87% | ..... |
| Medical School of Maine..... | 1892 | 77% | C. |
| Tulane University, Louisiana..... | 1899 | 72% | F. |
| College of Physicians and Surg., Ill. | 1902 | 75% | ..... |
| Columbia University, New York ... | 1889 | 83% | ..... |
| Columbia College, New York..... | 1900 | 88% | ..... |
| University Vienna, Austria..... | 1891 | 74 | F. |
| Western Reserve University, Ohio | 1900 | 83% | ..... |
| Washington University, Missouri... | 1900 | 79% | ..... |
| Chicago Homeopathic Coll., Ill. | 1892 | 65% | F. |
| Bellevue Hospital College..... | 1889 | 44% | F. |
| Medical College of South Carolina | 1884 | 80% | ..... |
| Kentucky School of Medicine, Ky. | 1885 | 79% | ..... |
| Jefferson Medical College, Pa..... | 1875 | 75% | ..... |
| Saginaw Valley Med. Coll., Mich... | 1901 | 77% | ..... |
| University of Colorado | 1897 | 79% | ..... |
| Detroit Medical College, Michigan | 1897 | 61% | F. |
| Bowdoin Medical College, Maine... | 1901 | 71% | F. |
| University of Louisville, Kentucky | 1875 | 77% | C. |
| Barnes Medical College, Missouri... | 1897 | 80% | ..... |
| Chicago Medical College, Illinois... | 1869 | 60% | F. |
| Hahn Medical College, Illinois..... | 1802 | ..... | † |
| " " " | 1884 | 72 | † |
| " " " | 1903 | 83% | ..... |
| " " " | 1903 | 80% | ..... |
| " " " | 1903 | 76% | C. |
| " " " Hospital " " " | 1891 | 73% | F. |
| John A. Creighton Med. Col., Omaha | 1900 | 78% | ..... |
| University of Niagara, N. Y..... | 1898 | 77% | ..... |
| Baltimore Medical School, Md..... | 1902 | 82% | ..... |
| State University of Iowa..... | 1883 | 70% | F. |
| University of Buffalo, N. Y..... | 1899 | 80% | ..... |
| " Louisville, Ky..... | 1892 | 72% | F. |
| " City of New York ... | 1886 | 71% | F. |
| Hahn Hospital College, S. F..... | 1901 | 71% | F. |
| Northwestern University, Ill..... | 1902 | 87% | ..... |
| " " " | 1902 | 84% | ..... |
| Rush Medical College, Chicago.... | 1869 | 79% | ..... |
| " " " | 1893 | 83% | ..... |
| " " " " " | 1894 | 66 | F.* |
| " " " " " | 1897 | 73% | F. |
| " " " " " | 1903 | 84% | ..... |
| University of Michigan..... | 1864 | 69% | F. |
| " " " | 1890 | 71% | F. |
| " " " | 1868 | 80% | ..... |
| " Pennsylvania | 1884 | 74% | F. |
| " " " | 1900 | 85% | ..... |
| " " " | 1891 | 75% | ..... |

* Previously conditioned.

* Took one examination only.

San Francisco, August 4th, 5th, and 6th.

PERSONAL MENTION.

| College. | Date Graduation. | Percent- age. | |
|---|------------------|------------------|-------|
| Cooper Medical College..... | 1902 | 77 1/2 | C. |
| " " | 1902 | 79 | ..... |
| " " | 1903 | 80 1/2 | C. |
| " " | 1903 | 79 1/2 | ..... |
| " " | 1903 | 83 1/2 | ..... |
| " " | 1903 | 80 1/2 | ..... |
| " " | 1903 | 75 | ..... |
| " " | 1903 | 76 1/2 | ..... |
| " " | 1903 | 83 1/2 | ..... |
| " " | 1903 | 75% | ..... |
| " " | 1903 | 77 1/2 | ..... |
| " " | 1903 | 81 1/2 | ..... |
| " " | 1903 | 72 1/2 | ..... |
| " " | 1903 | 80 1/2 | ..... |
| " " | 1903 | 79 1/2 | ..... |
| College of Physicians and Surgeons..... | 1903 | 74 1/2 | ..... |
| " " | 1903 | 79 1/2 | ..... |
| " " | 1903 | 74 1/2 | ..... |
| " " | 1903 | 81 1/2 | ..... |
| " " | 1903 | 85 1/2 | ..... |
| " " | 1903 | 84 1/2 | ..... |
| " " | 1903 | 89 1/2 | ..... |
| " " | 1903 | 75 1/2 | ..... |
| " " | 1903 | 87 1/2 | ..... |
| " " | 1903 | 78 1/2 | ..... |
| " " | 1903 | 73 1/2 | ..... |
| " " | 1903 | 75 | ..... |
| " " | 1890 | 75 | ..... |
| University of California..... | 1902 | 75 1/2 | ..... |
| " " | 1903 | 87 1/2 | ..... |
| " " | 1903 | 72 1/2 | ..... |
| " " | 1903 | 77 1/2 | ..... |
| " " | 1903 | 79 | ..... |
| " " | 1903 | 76 1/2 | ..... |
| " " | 1903 | 80 | ..... |
| " " | 1903 | 86 1/2 | ..... |
| " " | 1903 | 83 1/2 | ..... |
| " " | 1903 | 77 1/2 | ..... |
| " " | 1902 | 78 1/2 | ..... |

MISCELLANEOUS.

| | | | |
|---------------------------------------|------|--------|-------|
| Bowdoin Medical College, Maine..... | 1893 | 75 | ..... |
| Berlin University, Germany..... | 1901 | 76 1/2 | ..... |
| University of Louisville, Ky. | 1887 | 53 1/2 | F. |
| Pulte Medical College, Ohio | 1903 | 75 1/2 | ..... |
| Univ. of Georgetown, Wash., D. C. | 1902 | 77 1/2 | ..... |
| Yale University, Connecticut..... | 1898 | 81 1/2 | ..... |
| Johns Hopkins University, Md..... | 1900 | 91 | ..... |
| Saginaw Valley Med. Col., Mich.... | 1901 | 66 1/2 | F. |
| University of Michigan..... | 1882 | 61 1/2 | F. |
| McGill Medical College, Ontario... | 1875 | 73 1/2 | F. |
| New York Medical College, N. Y. | 1896 | 66 1/2 | F. |
| College of Phys. and Surg., Illinois | 1902 | 72 1/2 | F. |
| Bellevue Hospital College, N. Y. | 1903 | 80 1/2 | ..... |
| New York Homeo. Med. Col..... | 1903 | 76 1/2 | C. |
| Vanderbilt University, Tennessee.. | 1903 | 70 1/2 | F. |

Deaths.

Dr. Charles Brooks Brigham, of San Francisco, died on August 24th, at his residence, 2202 Broadway, after illness of six weeks, having been stricken with paralysis at Lake Tahoe. Dr. Brigham was born in Boston in 1845, and graduated from Harvard, and after service in French medical corps, came to San Francisco in 1873. He was a member of the San Francisco County Medical Society.

Dr. Thomas E. Taggart, formerly of Bakersfield, now a resident of Oakland, has opened an office in San Francisco.

Dr. Philip Mills Jones has returned from an extended sojourn in the East.

The paper on "Care of the Health of University Girls," by Dr. Mary E. B. Ritter, which was printed in the August JOURNAL, also appeared in the *Western Journal of Education* as per resolution passed at Santa Barbara.

The Lane Course of lectures at Cooper College, August 24-28, were delivered this year by Dr. Oscar H. Allis, of Philadelphia, the general subject being "Fractures and Dislocations."

Dr. Victor C. Vaughan, of Ann Arbor, has recently passed through California on his way to attend the meeting of the Washington State Medical Society, held at Spokane, September 1, 2 and 3. Dr. Vaughan's excellent work in the domain of sanitary science, and his original work on ptomaines and leukomaines, is too well known to need comment. He spent several days in Los Angeles, where he was entertained by our President, Dr. H. Bert. Ellis, and visited Santa Barbara, San Jose, Stanford University and the Lick Observatory on his way north.

Dr. Chas. E. Turner has been elected secretary of the Board of Health of Vallejo, which position carries with it that of Health Officer.

Dr. Walter B. Coffey, president; Dr. M. Morrison and Dr. McKenzie, vice-presidents; Dr. James T. Dunn, secretary, and Dr. F. K. Ainsworth, treasurer, have been elected the officers of the newly organized Railway Surgeons Association of the Pacific Coast. The Association adjourned to meet in San Francisco next year.

Capacity for Enjoyment—Medical men are like other men in their capacity for enjoyment, in their willingness to be entertained or amused, and are second to none in possession of a wholesome good-fellowship which takes pleasure in the company of frères.—*Brooklyn Med. Journal*.

Abolish Unsanitary Conditions.—The data brought together by Sedgwick and Winslow certainly seem to warrant the conclusion that seasonal prevalence of typhoid fever is dependent largely on the influences of temperature on the growth and persistence of the typhoid bacillus. Their study constitutes a valuable addition to our knowledge of typhoid fever. The conclusions emphasize the urgent necessity in cities to "clean up" and to abolish all unsanitary conditions in crowded tenement districts so as to limit as much as possible the chances for typhoid bacilli surviving in our environment. These measures are, of course, only of secondary importance compared with the *sine qua non* from freedom from typhoidal diseases, namely, uninfected water.—*Journal A. M. A.*

Early Operation.—Would that every physician and surgeon were persuaded that it is better to remove a dozen benign tumors than to let a malignant one get beyond the time for hopeful results through surgical intervention. We have no right to ignore the fact that early surgical treatment can never be replaced by extensive operations, and that in many instances the advanced forms of the disease which are usually brought to surgeons are evidence of careless diagnosis or inexcusable procrastination on the part of a medical man who should have insisted, with all the firmness at his command, upon immediate recourse to operative measures.—*International Journal of Surgery*.

DEPARTMENT OF MATERIA MEDICA, THERAPEUTICS AND PHARMACY.

Believing that there should be some more satisfactory channel of communication between the physician and the pharmacist, whose aims and whose work are so closely allied, and whose first and greatest duty is to the public, the JOURNAL has established this department. It will be conducted on the same lines as the other departments of the JOURNAL, and the effort to attain and retain a high ethical standard will be the same. The fact is being recognized more and more every day that there is a profession of pharmacy as well as a business of pharmacy, and it is the former which we especially desire to cultivate and aid. There is much information that is quite as interesting to the pharmacist as to the physician, and *vice versa*.

Both physicians and pharmacists are constantly in need of unprejudiced information relative to *materia medica* products, and so far as it is in our power we shall try to supply such information.

The JOURNAL will be very glad to have physicians and pharmacists write to us asking enlightenment on such questions as come to their attention relative to matters in the newer *materia medica*, chemicals, pharmaceuticals, etc., and, in fact, any matters of interest or doubt. Sometimes we may not feel free to publish the information desired, and sometimes we shall not be in possession of the information sought; but we shall try to get it.

Often the physician, through ignorance of things pharmaceutical, does the pharmacist great injustice; and often the pharmacist is unjust to the physician through ignorance of the physician's mental attitude or necessities. If we can, we want very much to help in smoothing out some of these tangles, and make the relations between physician and pharmacist more nearly professional and friendly. We may not be able to succeed in doing this, but we shall, for a time at least, make the attempt.

For instance, why should the pharmacist be compelled to carry in stock six different brands and makes of one single chemical when one would suffice. Probably very few physicians are aware of the fact Urotropin, Formin, Cystogen, Helmitol, Aminoform, and Ammonio-formaldehyde, are really and actually one and the same identical thing; e. g., Hexamethylene-tetramine. Each one of these six names for the same thing is used exclusively by a single manufacturer who claims that his is the best and the only pure and satisfactory preparation; whereas the fact is that, as each makes the same statement, we cannot believe all of them, and must simply assume that each makes a fairly good grade of Hexamethylene-tetramine. Now the physician is not going to remember that word, or to try and use it when he wishes to prescribe for the thing itself. Consequently one physician uses the name of one brand, another remembers the name of another brand, and so on. The pharmacist finds prescriptions coming in calling for all of these six different names, and if he is conscientious he must carry in stock all six makes of one single simple chemical, unfortunately with a long name, in order to meet the fictitious requirements artificially established by these six manufacturers. This is plainly an injustice to the pharmacist, for it demands from him the investment of six times the actual necessary amount of money, for any one single make of this chemical would really do as well as any other.

Then why not agree that when a physician writes a prescription for Urotropin, Formin, Cystogen, Helmitol, Aminoform, or Ammonio-formaldehyde,

what he really wants is Hexamethylene-tetramine, and that the pharmacist who fills his prescription with any one of these six preparations is satisfactorily carrying out the requirements of the physician? Let the manufacturers make as many brands of each thing as there are manufacturers, if they like, but let the physicians refrain from being accessory to the crime of ruining each and every pharmacist by helping the manufacturers and compelling each pharmacist to carry in stock numbers of brands of the same identical things.

This is not the only example of reduplication; it is simply cited here as an illustration of one class of things that this department will deal with. If anyone is opposed to the agreement suggested above, we respectfully request that he address the JOURNAL, stating his objections and his reasons for them.

Income From Cultivating the Cocaine Habit—Some interesting light is thrown upon this question in a recent issue of the *Pharmaceutical Era*. Schering & Glatz, in introducing a eucaine preparation in Chicago, sent out a circular stating that their preparation was a "safe and efficient substitute for cocaine." A very stringent law controlling the unlicensed sale of cocaine in Chicago has recently gone into effect, and the Board of Pharmacy is empowered, under this statute, to revoke the license of any pharmacist selling cocaine or other forms of "dope" in violation of the law. The Board has ruled that the eucaine preparation is to be quite as carefully restricted as cocaine itself, and thus the obvious attempt to evade the law by selling eucaine adulterated with cocaine, is at once headed off. If the statements published are anywhere near the truth, it certainly was none too soon for the law to step in and stop the murderous trade. One "druggist" (Heaven save the mark! He certainly should ask the pardon of his fellows for thus bringing disgrace upon the name!) is reported to have made some \$25,000 a year of this blood money, and to have bought cocaine in 1500 ounce lots. "Another concern which had to give notes and a mortgage on its store to start in business on the levee, made so much money the first year that it paid all its debts and bought a handsome branch store in a residence district, paying cash down. How this was done, of course, nobody can testify but the owners." The statement has been repeatedly made, and as often denied, that the wholesaler and the manufacturer are the inventors to the pharmacists' adulteration. In this case it is specifically charged that agents of the wholesalers have canvassed the field, suggesting to the pharmacists that the preparation may be sold to the "fiends" as a substitute for their "dope," or that it may be mixed with cocaine and sold with safety, owing the very great difficulty of determining the fraud by assay, the chemical formulæ being so similar.

AMERICAN PHARMACEUTICAL ASSOCIATION. FIFTY-FIRST ANNUAL MEETING.

Mackinac Island, Aug. 3-7.
(Reported by P. M. J.)

The association considered a number of questions of scientific interest and policy, but the two matters of principal interest were the report of the special committee on a proposed National Bureau of Medicines and Foods, and the report, and its disposition,

of the committee on adulterations. As the last named committee reported first, its findings will be first given. Only the principal and more flagrant departures from standard are here cited, though the whole list included over 100 items, almost all of which are important pharmaceuticals. Some twenty-five samples of "aristol," or dithymol-diodid, were found to contain not a trace of aristol. This article should leave no ash and should be soluble in ether, yet the following examples taken from the analyses written on the original packages and made by Coblenz, of New York, are instructive:

| | |
|-----|---|
| (1) | Ash, 33.7 per cent; ether insoluble, 46.0 per cent. |
| (2) | " 42.0 " " 46.0 " |
| (3) | " 6.8 " " 11.7 " |
| | Also contained acetanilid. |
| (4) | Ash, 4.0 per cent; ether insoluble, 8.0 per cent. |
| (5) | " 2.0 " " 22.2 " |
| (6) | " 42.0 " " 64.6 " |
| (7) | " 27.0 " " 37.0 " |
| (8) | " 18.2 " " 25.0 " |
| | (9) Pure acetanilid. |

Several contained large percentages of free alkali and impurities due to careless manufacture. Some of the other articles noted in the report are as follows:

Arroirroot—All cornstarch.

Beeswax—Paraffin 33 per cent to 60 per cent; starch 33 per cent.

Beechwood creosote—Guaiacol removed.

Linseed meal—Oil removed; sometimes oil removed and petroleum oil substituted.

Mercurial ointment—Containing no mercury!

French almond oil—Wholly peanut oil.

Oil of cedar—“The quality of oil of cedar seems to be abnormally bad!”

Cod liver oil—Mixed with seal oil, or substituted by “coast” or “shore” oil, and sometimes petroleum oils.

Olive oil—Paraffin oil, or peanut oil in most cases.

Black pepper—Seventy per cent ground rice.

Potassium iodid C. P.—(Note the “C. P.”) Contained sulphate, chlorid, iodate and sodium—“Not even suitable for medicinal use,” in the words of the reporter. Apparently it is a recognized fact that pharmaceutical chemicals must be very remarkably bad to be unfit for “medicinal use”!

Two papers along the same line were also presented; one by G. M. Beringer, on examination of 182 samples of phenacetin, and the other by Dr. H. H. Rusby, on the jaborandi plants used in manufacture. The samples of phenacetin were obtained from Newark, Baltimore, St. Louis, Detroit and New York. In every case the purchaser had asked for “ten grains of phenacetin.” Examination disclosed the fact that the actual weight of the powders dispensed ranged from four grains to twenty grains, and that 27 samples were grossly and fraudulently adulterated. At least one was pure acetanilid, and the possible result of taking twenty grains of acetanilid when ten grains of phenacetin were desired, is not pleasant to contemplate. Other adulterants used were boric acid, sodium salicylate and bicarbonate of soda.

Dr. Rusby showed the official specimens of jaborandi, or pilocarpus, as it more correctly should be called, and the spurious and unofficial varieties. He stated that fully 90 per cent of all the jaborandi imported into this country, to be used in making medicinal preparations, was of the spurious varieties, did not contain a trace of pilocarpin, and probably did contain other and harmful alkaloids.

Dr. H. H. Rusby, chairman of the joint committee on a proposed National Bureau of Medicines and

Foods, presented the unanimous report of that committee in the form of the preamble and resolutions, which follow:

WHEREAS; The foods and medicines supplied in the United States do not so uniformly agree with proper standards of purity, quality and strength as they should, and

WHEREAS; A degree of distrust and want of confidence concerning the quality of such foods and medicines prevails to a discouraging extent, therefore it is

Resolved; That a more perfectly organized system for remedying the above mentioned conditions than that now existing should be devised and put into operation; and

Resolved; That the American Pharmaceutical Association and the American Medical Association, acting in harmony with the United States Government authorities, constitute the most competent and trustworthy means for attaining the objects named; and

Resolved; That the American Pharmaceutical Association shall coöperate to this end with the above institutions, provided that a plan be devised satisfactory to those institutions, and that the committee of this association be continued and instructed to report to the council. In the event that a plan satisfactory to the council of this association be reported to it previous to the next meeting of this association, said council shall be authorized to elect from the members of the American Pharmaceutical Association a board of directors consisting of five (5) members, to act with a similar board, in the event of its appointment by the American Medical Association, and with the United States Government authorities, in the establishment of a National Bureau of Medicines and Foods, and this council shall immediately upon the election of such board, report the same to the president of the American Medical Association, and,

Resolved; That in carrying out these resolutions, the following general principles shall be adhered to:

(1) That neither this committee nor the proposed board of directors, shall have authority to draw upon any funds of the American Pharmaceutical Association.

(2) That the methods employed for obtaining the objects stated above may include commendation of worthy products, or condemnation of unworthy ones, or both; provided, that said methods of condemnation do not in any way involve the American Pharmaceutical Association in legal responsibility.

(3) That nothing to be undertaken by such a bureau shall be in conflict with the spirit of the United States Pharmacopoeia, or with the United States Government authorities.

(4) That the operation of the proposed bureau shall be free from any attempt to secure financial profit for any of the institutions named herein, nor for any of their members or agents; but said bureau is authorized to employ proper means for securing the funds necessary to defray its legitimate expenses.

On motion of Prof. Diehl, the preamble and first resolution were adopted and the balance of the resolutions referred to the council.

Thursday morning the council set aside for considering the matter, allowing the first hour for those who opposed the matter to state their views, and the succeeding half hour to those who approved the measure. Those representing the manufacturing interests of Nelson, Baker & Co.; Parke, Davis & Co.; Sharpe & Dhome, and the Geo. S. Merrill Co., spoke in opposition to the proposed bureau. The arguments urged against the plan were directed against the idea of certifying worthy articles, and were based on the assumption, by each house, that its name

is a sufficient guarantee of standard, and that to have any certificate affixed to its labels would be derogatory to its dignity. They all admitted the existence of the evils spoken of, but thought a method of condemning unworthy products would be more desirable. From the statements made it was evident that some of those who spoke had not studied the matter sufficiently to understand its details.

On the pro side, Mr. Alpers, of New York, spoke for the retail pharmacists, with whom he had discussed the matter, and said he thought such an organization, if it could be formed, would be the greatest blessing that could happen to the pharmacists of the country. As indicating the necessity for some such undertaking, he cited an experience of his own, the week before: In filling a prescription, he found that he did not have sufficient of a certain U. S. P. fluid extract, and so sent to a nearby store to borrow a few ounces; when mixed the two lots gave a muddy precipitate, though they were supposedly identical. He said they were made by two houses, representatives from which had

spoken against the proposed bureau at that hearing.

Dr. Rusby called attention to the statement of Parke, Davis & Co., for the reason they gave for objecting to the proposed organization. They stated that they had expended many hundreds of thousands of dollars in an effort to bring about a general belief that theirs was the only house whose goods were absolutely reliable, and that if such a bureau were organized, it would show by certificate that many of the preparations of the smaller manufacturers were also standard, and therefore, that they would lose business. Their claim, he stated, was either true or false; if true, it argued great need for a bureau, and if false, then they had expended large sums in wholesale deception.

The council took the matter under advisement and through a sub-committee, recommended that the committee be continued to go on with the work, and that if a plan satisfactory to the two associations and the United States Government authorities be developed, that it be adopted.

BOOK REVIEWS.

Radium, and other Radio-Active Substances; Polonium, Actinium, and Thorium, with a Consideration of Phosphorescent and Fluorescent Substances, the Properties and Applications of Selenium and the Treatment of Disease by the Ultra-violet Light. By William J. Hammer, consulting electrical engineer. A lecture delivered at a meeting of the American Institute of Electrical Engineers, and the American Electrochemical Society, New York, April 17th, 1903. New York: D. Van Nostrand Company, 1903. Price \$1.00.

This little book is well worth the very careful reading of anyone interested in the subject of radioactivity and the recent discoveries and advances that have been made from the initial work of Crookes, to the recent discovery of radium by Becquerel, and its isolation by Prof. Curie. In places the history of the advancing discoveries and the account of how one thing developed from another, apparatus being devised from step to step, with ever-increasing delicacy, reads almost like a romance. And when the foreground has been cut away and we come to the data relating to radium itself, we find the interest constantly growing. A system of measurements has been carefully worked out and "Where substances are referred to as possessing certain 'radioactivity,' for instance 300, it means that the radiations are 300 times as powerful as the original radiations emanating from uranium which were discovered by Becquerel and which are taken as a standard of comparison." In 1898 Prof. Curie "succeeded in isolating a second substance, found in pitchblend, which was associated with barium and possessed many of the chemical and other characteristics of that substance, and to this they gave the name of 'Radium.'" Of radium and these other radioactive substances, many curious and intensely interesting facts are already known. "Within the past month great interest has been attracted by the statement made by Prof. Curie and Laborde that radium maintains its own temperature at 1.5 Centigrade above its surroundings, this being equivalent to saying that half a pound of radium salt would evolve in one hour sufficient heat to equal that caused by the burning of one-third of a foot of hydrogen gas; that the heat evolved by pure radium is sufficient to melt more than its own weight of ice every hour." Of it Lord Kelvin has said "that the discovery of Bäquerel radiations had placed the first question mark against the principle of conservation of energy which has been placed against it since that principle was enunciated." Only two or three samples of pure radium have been isolated. From one of these, a

minute quantity, weighing between two and three-hundredths of a gramme, it was possible to determine the fact that radium is a new element, with an atomic weight of 225. "In answer to my inquiry as to its value, Prof. Curie said that 100,000 francs could not purchase this tiny sample." "As indicative of the enormous difficulties encountered in procuring radium, it is interesting to note that it takes 5000 tons of uranium residues to produce a kilo (2.2 pounds) of radium." The cost of merely handling the uranium residues is said to be approximately \$2000 per ton. The whole record of the physical and physiological activity of radium is fascinating, but unfortunately we cannot publish it all, or at greater length.

—P. M. J.

International Clinics. A Quarterly of Illustrated Clinical Lectures and especially prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other Topics of Interest to Students and Practitioners by leading Members of the Medical Profession throughout the World. Edited by Henry W. Cattell, A. M., M. D., Philadelphia, U. S. A., with the Collaboration of John B. Murphy, M. D., Chicago; Alexander D. Blackader, M. D., Montreal; H. C. Wood, M. D., Philadelphia; T. M. Rotch, M. D., Boston; E. Landolt, M. D., Paris; Thomas G. Morton, M. D., Philadelphia; James J. Walsh, M. D., New York; J. W. Ballantyne, M. D., Edinburgh, and John Harold, M. D., London, with Regular Correspondents in Montreal, London, Paris, Leipsic, and Vienna. J. B. Lippincott Company, Philadelphia and London. Cloth, \$2.00. Volume 2, 13 Series.

Volume 2 of the 13th series of the International Clinics, is certainly well up to the standard of this valuable set of essays and clinical lectures. Opportunity, at this season of the year, much space has been devoted to diarrhoea and kindred disturbances. Where the material is all so good it seems unfair to comment on one or two things only, yet it is impossible not to favorably mention the excellent articles on Endocarditis in Childhood, by F. J. Paynton, of London, and the very common sense essay of Alexander Haig, on the Etiology, Prevention and Treatment of a Common Cold. The suggestions in the latter article, relative to the relations noted between a uric-acid free diet and absence or cure of cold, are certainly worthy of careful consideration by all.

—P. M. J.